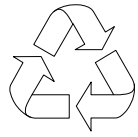
Packard Bell oneTwo M3600
All-In-One Computer Service Guide



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PRINTED IN TAIWAN

Revision History

Refer to the table below for changes made on this version of the Packard Bell oneTwo M3600 All-In-One Computer Service Guide.

Date	Chapter	Updates

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Conventions

The following textual conventions are used in this service guide.

SCREEN MESSAGES	Denotes actual messages that appear on screen.
NOTE	Gives additional information related to the current topic.
WARNING	Alerts you to any physical risk or system damage that might result from doing or not doing specific actions.
CAUTION	Gives precautionary measures to avoid possible hardware or software problems.
IMPORTANT	Reminds you to do specific actions relevant to the accomplishment of procedures.

Service Guide Coverage

This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for our "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.

FRU Information

Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed service guide. For AUTHORIZED SERVICE PROVIDERS, your office may have a DIFFERENT part number code to those given in the FRU list of this printed service guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

Table of Contents

Chapter 1 – Features and Specifications 1

System Features 1
Physical Specifications 2
Environmental Requirements 2
System Tour 3
Front View 3
Right Views 4
Left and Rear Views 5
Hardware Specifications 6
Processor 6
Chipsets 6
BIOS 6
Memory 6
Hard Disk Drive 7
Optical Disc Drive 7
Card Reader 7
Ethernet 7
Wireless LAN 7
Audio 8
Webcam 8
Display 8
AC Adapter 8

Chapter 2 – System Utilities 9

CMOS Setup Utility 9
Accessing the Setup Utility 10
Navigating through the Setup Utility 11
Setup Utility Menus 11

Chapter 3 – System Disassembly 25

Disassembly Tools 25
Pre-disassembly Procedure 25
Disassembly Procedures 26
Removing the Computer Stand 26
Removing the Side Bars 27
Removing the Front Bezel 28
Removing the Webcam Module 29
Removing the LCD Assembly 30
Removing the LCD LVDS Cable 31
Removing the LCD Panel Bracket and Inverter Board 31
Removing the Optical Disc Drive 33
Removing the Hard Disk Drive 35
Removing the System Fan 36
Removing the Heat Sink 38
Removing the Memory Modules 39
Removing the Webcam Cable 39
Removing the Power Button/LED Assembly 40
Removing the Speakers 41
Removing the Mainboard 42

Chapter 4 – Troubleshooting 43

Hardware Diagnostic Procedure 43
System Check Procedures 43
Checkpoints 44
POST Error Indicators 48
BIOS Recovery 57
Clearing CMOS 58

Chapter 5 – System Architecture 59

Block Diagram 59
Mainboard Layout 60

Chapter 6 – Field Replaceable Unit (FRU) List 63

Exploded Diagram 64
FRU List 65

Appendix A – Model Definitions and Configurations 71

Appendix B – Test Compatible Components 73

Approved Vendor List (AVL) 75

Appendix C – Online Support Information 79

Index 81

Chapter 1

Features and Specifications

This chapter lists the features and specifications of the Packard Bell oneTwo M3600 AIO computer.

NOTE The items listed in this section are for reference only. The exact configuration of your PC depends on the model purchased.

System Features

Component	Description
Processor	Intel Atom D525 processor
Chipset	Intel NM10 Express Chipset
Memory	• Number of DIMM slots: Two DDR3 DIMM slots • Maximum memory: 4 GB (using two 2 GB modules)
Graphics	Integrated in the Intel Atom D525 processor or NVIDIA GeForce 218 GPU
Display	• 18.5-inch WXGA TFT LCD panel • sRGB compliant
Audio	• Two built-in 2W stereo speakers • Realtek ALC269 High Definition Audio Codec with Embedded Class D Speaker Amplifier
I/O ports	• Side panel – USB ports (two) – Headphone jack – Microphone jack • Rear panel – Line-out jack – USB ports (three) – Ethernet jack (RJ-45) – PS/2 keyboard and mouse ports
Media storage	• 2.5-inch 5400 rpm SATA hard disk drive (HDD) • Slim type SATA tray-type or slot-in optical disc drive (ODD)
Card reader	• 4-in-1 card reader slot • Supports MultiMediaCard (MMC), Secure Digital (SD), Memory Stick (MS), and Memory Stick PRO (MS PRO) cards
Connectivity	• Wired LAN: Onboard 10/100/1000 Ethernet support • WLAN option: Mini Card wireless network adapter (802.11 b/g/n) • Integrated 2.0 MP webcam with microphone
Mounting option	VESA mounting compliant
AC adapter	65 W
Operating system support	• Microsoft Windows 7 • Microsoft Windows XP • Linux 2.6 or higher • FreeDOS
Antivirus software	Norton Internet Security

Component	Description
Security	• BIOS-based user and supervisor passwords • Hardware monitor • Kensington lock
Power management	• ACPI 2.0-compliant • Energy Star 5.0 compliant

Physical Specifications

Aspect	Description
System dimension (W × H × D)	61.5 × 484 × 402.5 mm (2.42 × 19.05 × 15.85 in)
Mainboard form factor	Standard DTX
Mainboard dimensions (W × H)	190 × 175 mm

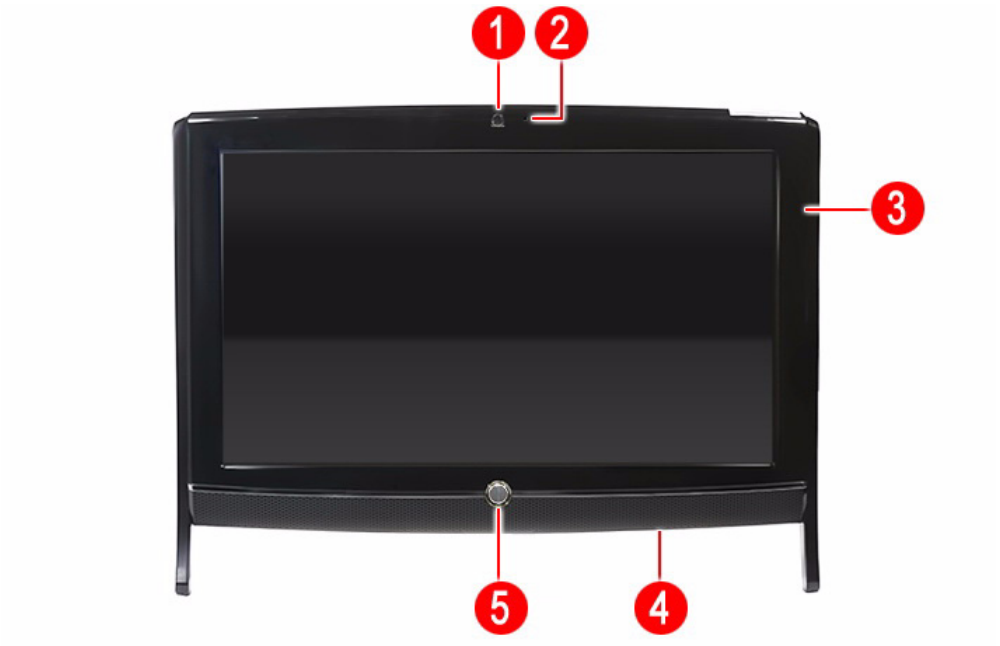
Environmental Requirements

Aspect	Description
Operating temperature	5 to 35 °C (41 to 95 °F)
Operating humidity	15% to 80% RH non-condensing

System Tour

The pictures and tables in this section illustrate the physical outlook of the computer.

Front View

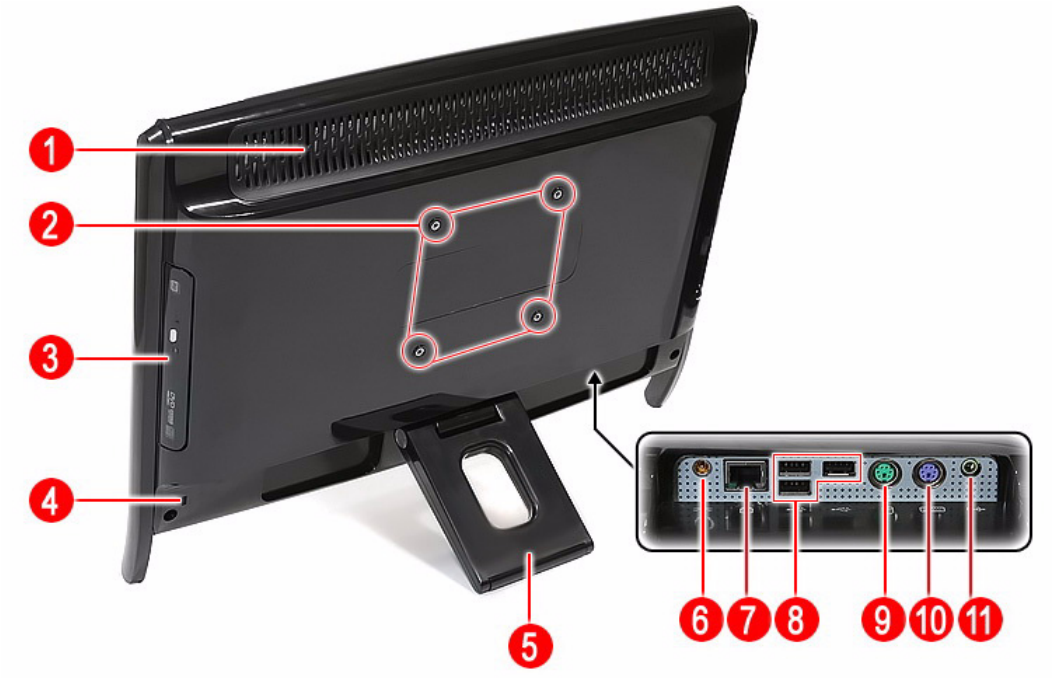


Item	Component
1	Integrated webcam
2	Integrated microphone
3	Display screen
4	Speakers
5	Power button/indicator • Green – System is in power-on mode • Amber – System is in standby mode

Right Views

Item	Component
1	Increase brightness key
2	Decrease brightness key
3	USB ports
4	4-in-1 card reader
5	Microphone jack
6	Headphone jack
7	Reset button

Left and Rear Views



Item	Component
1	Ventilation slots
2	Mounting holes for wall mount option
3	Optical disc drive (ODD)
4	Kensington lock slot
5	Computer stand
6	Power jack
7	Ethernet port (RJ-45)
8	USB ports
9	PS/2 mouse port
10	PS/2 keyboard port
11	Line-out jack

Hardware Specifications

Processor

Item	Specification
Model	Intel Atom D525
Clock speed	1.8 GHz
L2 cache	1 MB
# of cores	2
Socket	FCBGA559
Package type	45 nm
Max TDP	13 W

Chipsets

Item	Specification
System chipset	Intel NM10 Express Chipset
Super I/O	ITE 8757

BIOS

Item	Specification
BIOS chip	AMI BIOS
Setup utility	CMOS Setup Utility

Memory

Item	Specification
Controller	Integrated in the Intel processor
Number of DIMM slot	2
Maximum memory	2 GB (using two 2 GB modules)
Data rate	1333 MT/s
Supported capacities	1 or 2 GB
DIMM type	240-pin DDR3 SO-DIMM
Supported brands	ADATA, Hynix, Kingston, Micron, Unifosa, Samsung
Population rule	You can install memory modules in any combination as long as they match the above specifications.

Hard Disk Drive

Item	Specification
Controller	Integrated in the Intel NM10 Express Chipset
Form factor	2.5-inch 9.5 mm
Interface	SATA 2.0
Supported capacities	
160 GB	• HGST HTS545016B9A300 (5400 rpm) • WD WD1600BEVT-22A23T0 (5400 rpm)
250 GB	• HGST HTS545025B9A300 (5400 rpm)
320 GB	• HGST HTS545032B9A300 (5400 rpm) • WD WD3200BEVT-22A23T0 (5400 rpm)
500 GB	• HGST HTS545050B9A300 (5400 rpm)

Optical Disc Drive

Item	Specification
Controller	Integrated in the Intel NM10 Express Chipset
Type	DVD-Super Multi double-layer or Blu-ray Disc combo drive option
Form factor	Slim type, tray type or slot-in
Tray height (mm))	12.7 mm
Interface	SATA
Supported models	
DVD-Super Multi double-layer drive	• HLDS GT31N • PLDS DS-8A4SH

Card Reader

Item	Specification
Controller	Realtek RTS5159 Card Reader
Supported cards	• MultiMediaCard (MMC) • Secure Digital (SD) • Memory Stick (MS) • Memory Stick PRO (MS PRO) cards

Ethernet

Item	Specification
Controller	Realtek RTL8111DL Gigabit Ethernet controller
LAN protocol	10/100/1000 Mbps
LAN connector type	RJ-45

Wireless LAN

Item	Specification
Model	Lite-On WN6602RH (802.11 b/g/n)
Form factor	PCIe Mini Card

Audio

Item	Specification
Controller	Realtek ALC269 High Definition Audio Codec with Embedded Class D Speaker Amplifier
Features	• Two built-in 2W stereo speakers • Audio jacks – Right panel: Microphone and headphone jacks – Rear panel: Line-out jack

Webcam

Item	Specification
Resolution	2.0 MP
Supported models	• Chicony CNF924621004591L • Park Orchid C04PL036H

Display

Item	Specification
Panel model	LG LM185WH1
Screen size (diagonal)	18.5-inch
Type	TFT LCD
Resolution	1366 × 768 (Wide XGA)
Aspect ratio	16:9
Display colors	16.7M (6bit+A-FRC)
Brightness (typical)	250 nits
Contrast ratio	1000:1
Viewing angle (H/V, typical)	170/160
Response time (typical)	5 ms
Backlight	CCFL
Interface	Single channel LVDS
Dimension (H × V)	430.4 × 254.6 mm
Inverter board	• Darfon VZ.12164.501 • YNV-W21A 2PIN

AC Adapter

Item	Specification
Model	65 W (Delta ADP-65JH DB A / Hipro HP-A0652R3B 1LF)
Specifications	• 90V to 240V and 50Hz to 60Hz AC • 19V DC Output • 3 prong ICE-320-C13 or IEC-320-C5 AC connector

Chapter 2

System Utilities

CMOS Setup Utility

CMOS Setup Utility is a hardware configuration program built into the system ROM. Since most systems are already properly configured and optimized, there is normally no need to run this utility.

You will need to run this utility under the following conditions:

- When changing the system configuration including:
  - Setting the system time and date
  - Configuring the system drives and peripherals
  - Specifying the boot device sequence
  - Configuring the power management modes
  - Setting up system passwords or making other changes to the security setup
- When trying to resolve IRQ conflicts
- When a configuration error is detected by the system and you are prompted ("**Run Setup**" message) to make changes to the BIOS settings.

The Setup Utility loads the configuration values in a battery-backed nonvolatile memory called CMOS RAM. This memory area is not part of the system RAM, which allows configuration data to be retained when power is turned off. The values take effect when the system is booted. POST uses these values to configure the hardware. If the values and the actual hardware do not agree, POST generates an error message. You must run this utility to change the hardware settings from the default or current configuration.

IMPORTANT If you repeatedly receive "**Run Setup**" messages, the RTC battery located on the mainboard (BT1) may be defective. In this case, the system cannot retain configuration values in CMOS. Replace the RTC battery with a new one.

NOTE For ease of reading, CMOS Setup Utility will be simply referred to as "Setup" or "Setup Utility" in this Service Guide.

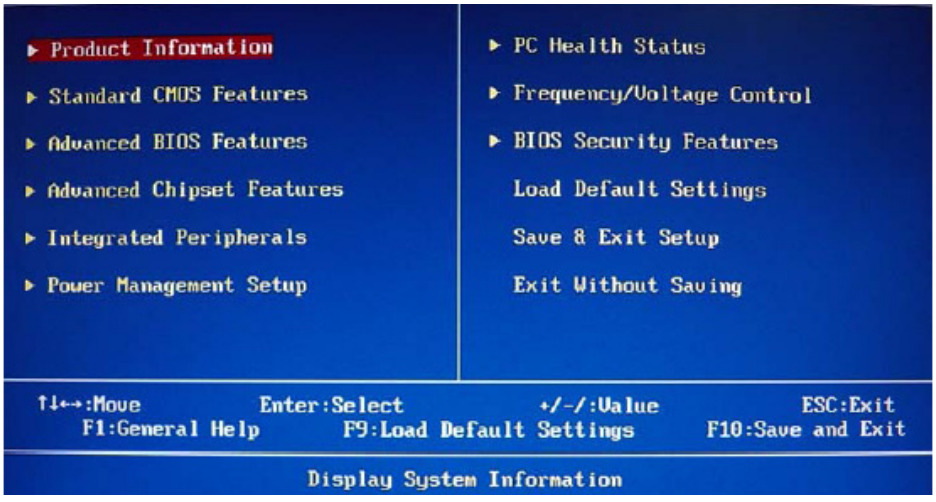
Accessing the Setup Utility

1. Turn on the computer.

   If the computer is already turned on, save your data and close all open applications, then restart the computer.

2. During POST, press **Delete**.

   If you fail to press **Delete** before POST is completed, you will need to restart the computer.



Use the **Up/Down/Left/Right** arrow keys to move between the menu options, then press **Enter** to execute that option.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a ▶) lead to submenus that enable you to change the values for the option. Use the **Up/Down/Left/Right** arrow keys to scroll through the items in the submenu

Navigating through the Setup Utility

Use the keys listed in the legend bar on the bottom of the Setup screen to work your way through the various menu and submenu screens of the Setup Utility. The table below lists these legend keys and their respective functions.

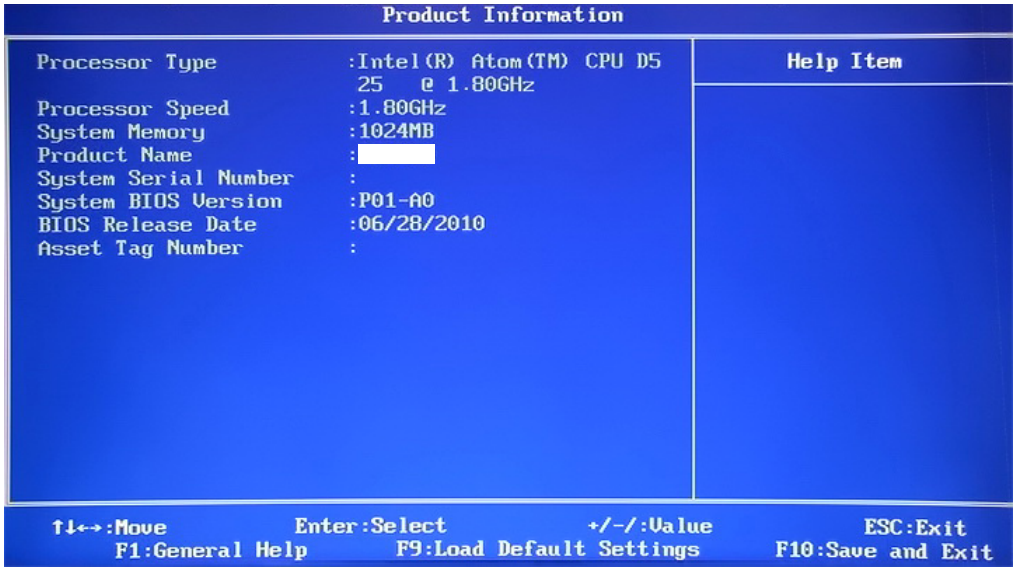
Key	Function
Up/Down/Left/ Right arrow keys	Move the cursor to the menu/field you want.The currently selected field will be highlighted.
Enter	• To open the page for the currently selected menu/submenu • To apply a field value.
PgUp and PgDn	Move the cursor to the previous and next page of a multipage menu.
Home	Move the cursor to the first page of a multipage menu.
End	Move the cursor to the last page of a multipage menu.
+ and -	To select a value for the currently selected field (only if it is user-configurable). Press these keys repeatedly to display all possible entries. A parameter that is enclosed in square brackets [ ] is user-configurable. Grayed-out parameters are not user-configurable for one of the following reasons: • The field value is auto-configured or auto-detected.· • The field value is informational only. • The field is password-protected.
Esc	If you press this key: • On one of the primary menu screens, the Exit menu displays. • On a submenu screen, the previous screen displays. • When you are making selections from a pop-up menu, closes the pop-up without making a selection.
F1	To bring up the General Help window. The General Help window describes other Setup navigation keys that are not displayed on the legend bar.
F9	Press to load default system values.
F10	Press to save changes and close the Setup Utility.

Setup Utility Menus

The Setup Utility has twelve menus for configuring the various system functions. These include:

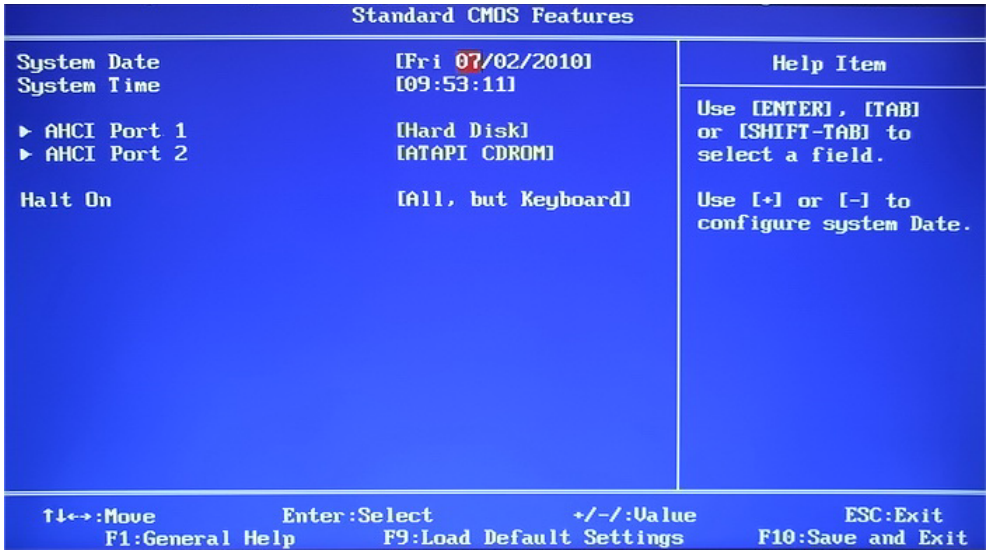
- Product Information
- Standard CMOS Features
- Advanced BIOS Features
- Advanced Chipset Features
- Integrated Peripherals
- Power Management Setup
- PC Health Status
- Frequency/Voltage Control
- BIOS Security Features
- Load Default Settings
- Save & Exit Setup
- Exit Without Saving

NOTES
- The screenshots used in this section are for illustration only. The values displayed may not be the same as those in your computer.
- In the descriptive tables following each of the menu screen illustrations, settings in **boldface** are the default and suggested settings.



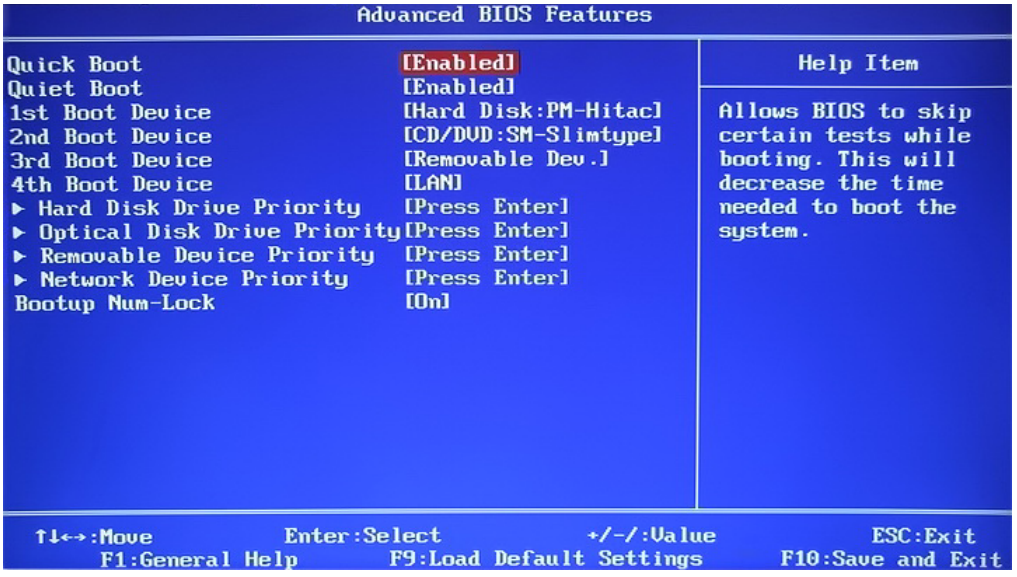
Field	Description
Processor Type	Type of processor installed on the system
Processor Speed	Speed of the processor installed on the system
System Memory	Size of system memory detected during boot-up
Product Name	Official model name of the computer.
System Serial Number	System serial number.
System BIOS Version	Current system BIOS version
BIOS Release Date	Date when the CMOS setup utility was released.
Asset Tag Number	System asset tag number

Standard CMOS Features



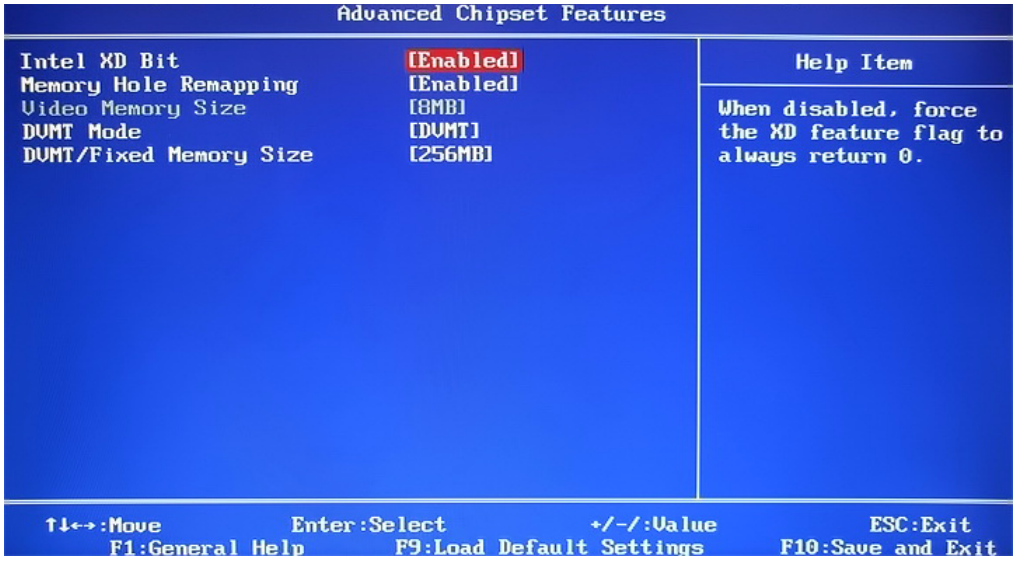
Field	Description	Value
System Date	Sets the system date.	MM/DD/YYYY (month/day/year)
System Time	Sets the system time.	HH:MM:SS (hour:minute:second)
AHCI Port 1–2	Your computer supports two SATA channels, each channel allows one SATA device to be installed. Press **Enter** to display the individual configuration screen of installed SATA drive(s).	
Halt On	Determines whether the system will stop for an error during the POST. Options include: • All Errors - Any error detected will pause the system. • No Errors - BIOS will ignore any errors detected during POST • All, but Keyboard - If a keyboard error is detected, BIOS will pause the system.	All Errors No Errors **All, But Keyboard**

Advanced BIOS Features


Advanced BIOS Features
Quick Boot [Enabled]
Quiet Boot [Enabled]
1st Boot Device [Hard Disk:PM-Hitac]
2nd Boot Device [CD/DVD:SM-Slimtype]
3rd Boot Device [Removable Dev.]
4th Boot Device [LAN]
▶ Hard Disk Drive Priority [Press Enter]
▶ Optical Disk Drive Priority [Press Enter]
▶ Removable Device Priority [Press Enter]
▶ Network Device Priority [Press Enter]
Bootup Num-Lock [On]
Help Item
Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.
↑↓←→:Move Enter:Select +/-/:Value ESC:Exit
F1:General Help F9:Load Default Settings F10:Save and Exit

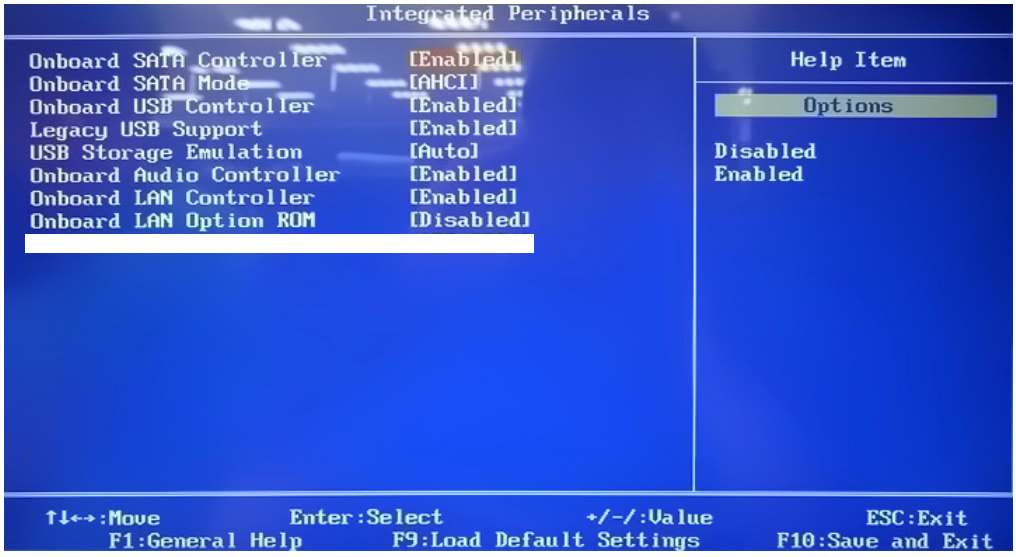
Field	Description	Value
Quick Boot	When enabled, the system starts up more quickly be elimination some of the POST routines.	**Enabled** Disabled
Quiet Boot	When enabled, BIOS will show a full screen logo when booting; if disabled, BIOS will show the diagnostic POST screen when booting.	**Enabled** Disabled
1st/2nd/3rd/4th Boot Device	Displays the device assigned to the specified boot sequence. The Setup Utility attempts to boot the operating system in this order. By default, the computer searches for boot devices in the following order: • Hard disk • Optical drive (CD/DVD) • Removable device • Network boot (LAN)	
Hard Disk Drive Priority	Press **Enter** to specify the boot device priority sequence for the installed hard drive(s).	
Optical Disk Drive Priority	Press **Enter** to specify the boot device priority sequence for the installed optical drive.	
Removable Device Priority	Press **Enter** to specify the boot device priority sequence for removable drives.	
Network Device Priority	Press **Enter** to specify the boot device priority sequence foe available network drives.	
Bootup Num-Lock	If you set this item to On, the keyboard Num Lock key will be active when the computer boots up.	**On** Off

Advanced Chipset Features



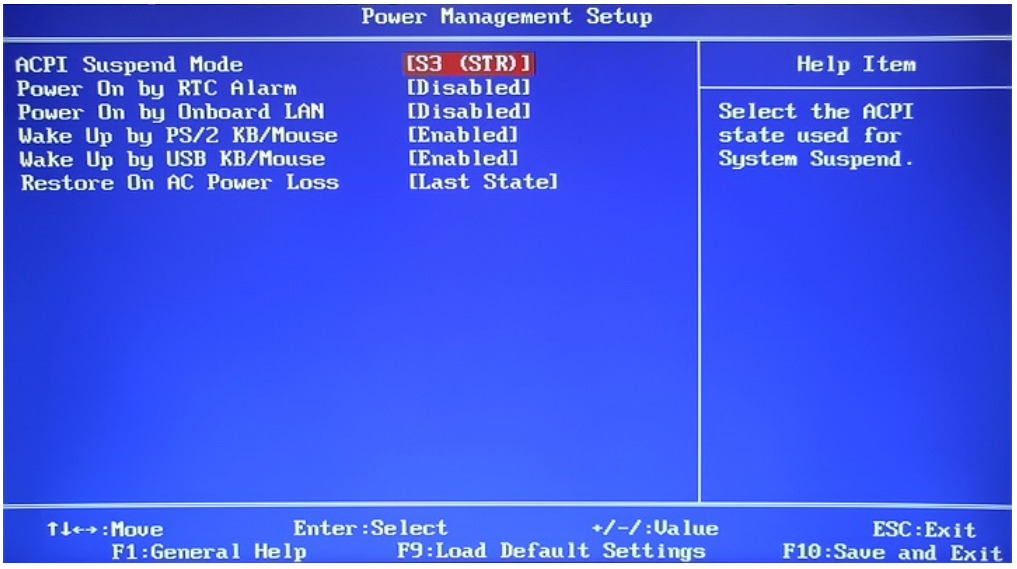
Field	Description	Value
Intel XD Bit	Select whether to enable the Intel Execute Disable Bit Technology. XD Bit is a hardware-based security feature that can reduce exposure to viruses and malicious-code attacks and prevent harmful software from executing and propagating on the computer or network.	**Enabled** Disabled
Memory Hole Remapping	When enabled, some or all of the memory between the 2 GB and 4 GB limits to addresses above 4 GB. This is a workaround for the PCI hole or PCI memory hole which is a limitation of 32-bit hardware and 32-bit operating systems that causes a computer to appear to have less memory available than is physically installed. **Note:** This feature is useful for systems running on 64-bit OS and those 32-bit systems that support the Physical Address Extension method.	**Enabled** Disabled
Video Memory Size	Displays the size of video memory detected during boot-up.	1 MB **8 MB**
DVMT Mode	Select the Intel Dynamic Video Memory Technology mode.	Fixed **DVMT**
DVMT/Fixed Memory Size	Select to specify the maximum memory size that can be allocated as graphics memory using the Intel Dynamic Video Memory Technology.	128 MB **256 MB** Maximum

Integrated Peripherals



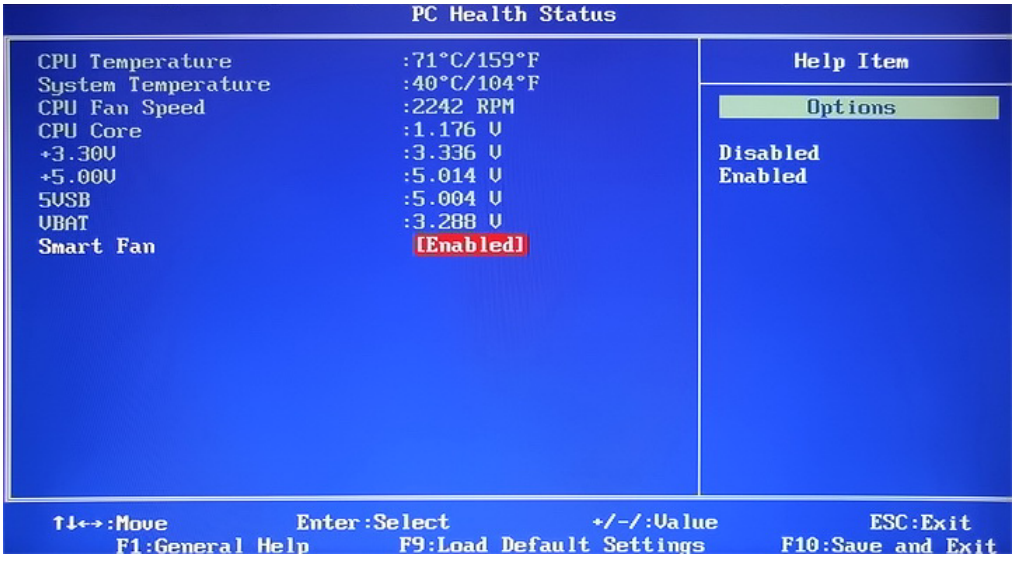
Field	Description	Value
Onboard SATA Controller	Enables or disables the onboard SATA controller.	**Enabled** Disabled
Onboard SATA Mode	Set the operating mode for the onboard SATA controller.	**AHCI** Native IDE
Onboard USB Controller	Enables or disables the onboard USB controller.	**Enabled** Disabled
Legacy USB Support	Enables or disables support for a USB mouse and USB keyboard. When enabled, any attached USB mouse or USB keyboard can control the system even when there is no USB driver loaded onto the system.	**Enabled** Disabled
USB Storage Emulation	If set to Auto, a USB devices with a capacity of equal or less than 2 GB will be emulated as a bootable floppy disk.	**Auto** Floppy Hard Disk
Onboard Audio Controller	Enables or disables the onboard audio controller.	**Enabled** Disabled
Onboard LAN Controller	Enables or disables the onboard LAN controller.	**Enabled** Disabled
Onboard LAN Option ROM	Enables or disables the onboard LAN option ROM function.	Enabled **Disabled**

Power Management Setup



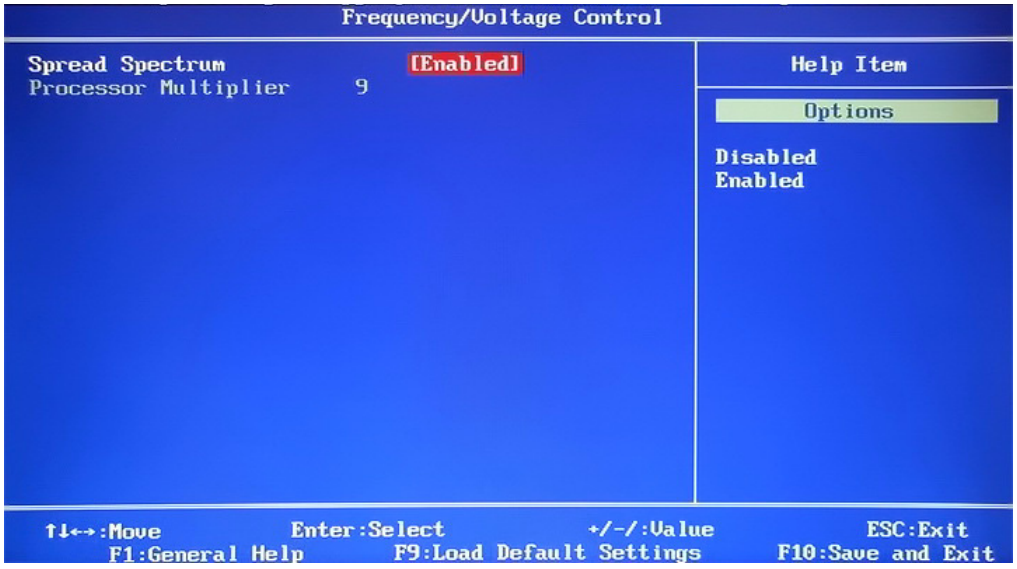
Field	Description	Value
ACPI Suspend Mode	Use this item to define how your system suspends. Default value is S3 (STR), the suspend mode is suspend to RAM, i.e., the system shuts down with the exception of a refresh current to the system memory.	**S3 (STR)** S1 (POS)
Power On by RTC Alarm	Enables or disables the system to wake up from a power-saving mode when an RTC alarm occurs.	Enabled **Disabled**
Power On by Onboard LAN	Enables or disables the system to wake up from a power-saving mode when the onboard LAN controller received a network message.	Enabled **Disabled**
Wake Up by PS/2 KB/Mouse	Enables or disables the system to wake up from a power-saving mode when a PS/2 keyboard or mouse is used.	**Enabled** Disabled
Wake Up by USB KB/Mouse	Enables or disables the system to wake up from a power-saving mode when a USB keyboard or mouse is used.	**Enabled** Disabled
Restore On AC Power Loss	Select the power state when an AC power loss occurs. • Off - The computer remains off until the power button is pressed. • Last State - The computer reverts to the last power state before the power loss occurred. • On - The computer switches back on after the AC power loss.	Power Off Power On **Last State**

PC Health Status

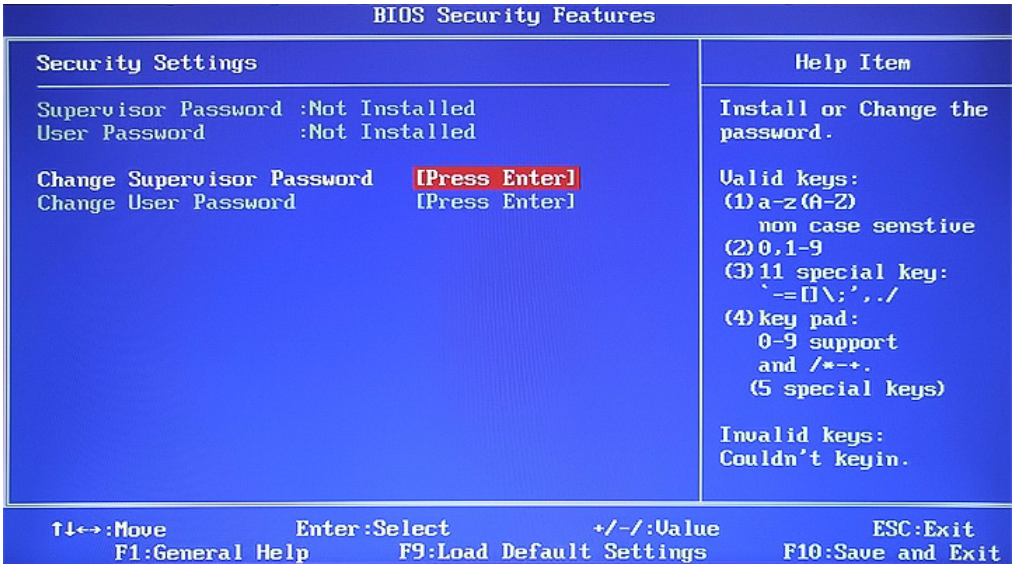


Field	Description	Value
CPU Temperature System Temperature CPU Fan Speed System Fan Speed CPU Core +3.30V +5.00V 5VSB VBAT	These items lets you monitor the parameters for critical voltages, temperatures and fan speeds.	
Smart Fan	When enabled, fan speed will speed up or slow down depending on the system temperature.	**Enabled** Disabled

Frequency/Voltage Control



Field	Description	Value
Spread Spectrum	When the mainboard's clock generator pulses, the extreme values of the pulses creates EMI (electromagnetic interference). Set this field to Enabled to reduce this EMI level. This reduces interference problems with other electronics in the area. **Note**: Remember to disable the Spread Spectrum feature if you are overclocking. A slight jitter can introduce a temporary boost in clock speed causing the overclocked processor to lock up.	**Enabled** Disabled
Processor Multiplier	This field is only visible if an engineering processor installed. It is only accessible when the EIST function is disabled.	



Field	Description	Value
Supervisor Password	Displays the supervisor password status. When set to Installed, this password will allow the user to access and change all settings in the Setup Utility.	Installed Not Installed
User Password	Displays the user password status. Only the following menus will be accessible when this password is set as Installed: • System Date and System Time • Exit Without Saving	
Change Supervisor Password	Press **Enter** to change the supervisor password.	
Change User Password	Press **Enter** to change the user password.	

Note the following before you define a system password:

- The maximum length of password contains 8 alphanumeric characters. The following keys are valid:
  - A-Z, a-z (case-insensitive)
  - 0-9
  - ` - + [ ] \ ; ' , . /,
  - Special keypad characters: 0-9 / * - +
- When you are prompted to enter a password, you have three tries before the system halts. Do not forget your password. If you forget your password, you may have to return your computer to your dealer to reset it.

To set a system password:

NOTE You need to set a supervisor password first before setting the user password.

1. Select Change Supervisor Password or Change User Password, then press **Enter**.

   The password box appears.

2. Type a password then press **Enter**.

IMPORTANT Be very careful when typing your password because the characters do not appear on the screen. Only shaded blocks representing each typed character are visible.

3. Retype the password to verify the first entry, then press **Enter**.

   You will be prompted to save the new password.

4. Press **Enter**.
5. Press **F10** to save the password and close the Setup Utility.

To change a system password:

1. Select Change Supervisor Password or Change User Password, then press **Enter**.

   The password box appears.

2. Type the original password, then press **Enter**.
3. Type a new password, then press **Enter**.
4. Retype the new password to verify the first entry, then press **Enter**.

   You will be prompted to save the new password.

5. Press **Enter**.
6. Press **F10** to save the password and close the Setup Utility.

To remove a system password:

NOTE When the supervisor password is removed, the user password will also be remove.

1. Select Change Supervisor Password or Change User Password, then press **Enter**.

   The password box appears.

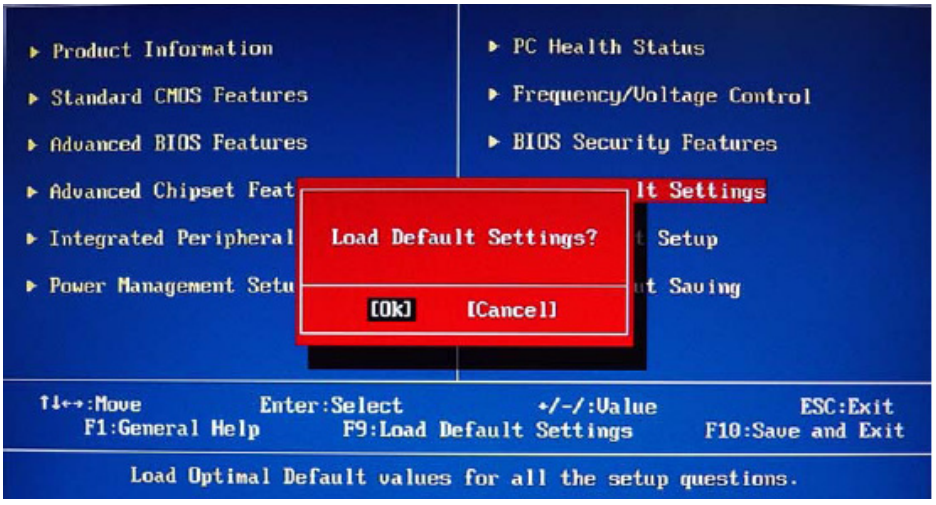
2. Type the original password, then press **Enter**.
3. Press **Enter** twice without entering anything in the new and confirm password fields.

   You will be prompted to confirm the password removal.

4. Press **Enter**.
5. Press **F10** to save the changes you made and close the Setup Utility.

Load Default Settings

Execute this menu to load the factory-default settings for all Setup parameters. Keyboard shortcut: **F9**



Perform the steps below to load the system default settings:

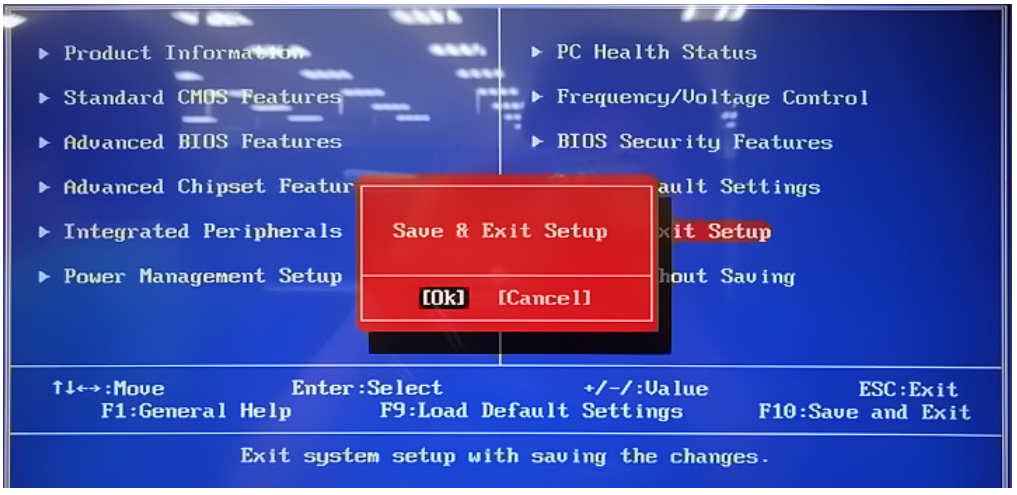
1. Select Load Default Settings, then press **Enter**.

   You will be prompted to load the system defaults.

2. Select **OK**, then press **Enter**.
3. Press **F10** to save the changes you made and close the Setup Utility.

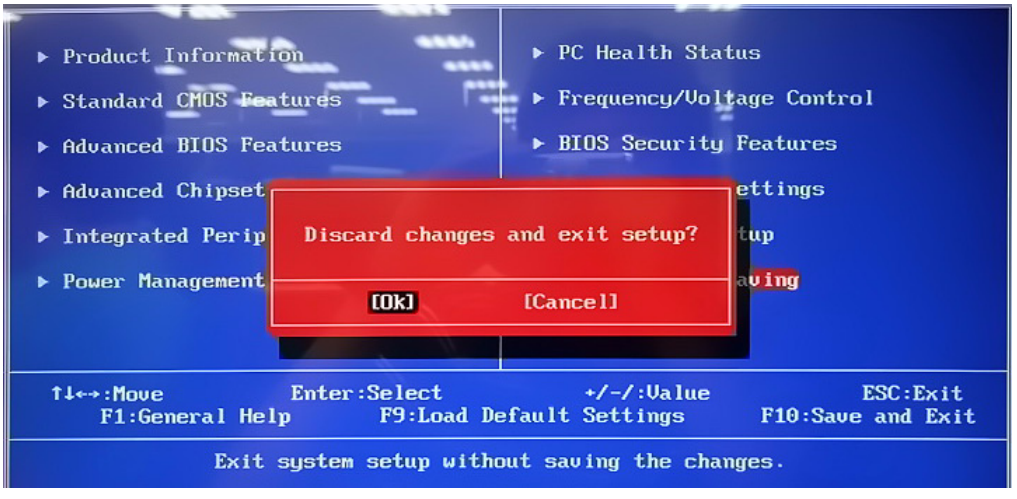
Save & Exit Setup

Execute this menu to save the changes made and closes the Setup Utility. Keyboard shortcut: **F10**



Exit Without Saving

Execute this menu to closes the Setup Utility without making any changes.



Chapter 3

System Disassembly

This chapter provides step-by-step instructions on how to disassemble the computer for maintenance and troubleshooting purposes.

Disassembly Tools

In performing the disassembly process, you will need the following tools:

- Wrist-grounding strap and conductive mat for preventing electrostatic discharge
- Philips screwdriver
- Flat screwdriver

NOTES

- To reinstall the system components and assemble the unit, perform the disassembly procedures in reverse.
- The screws for the different components vary in size. During the disassembly process, group the screws with their corresponding components to avoid mismatches when putting back the components.

Pre-disassembly Procedure

Before proceeding with the disassembly procedure, perform the steps listed below:

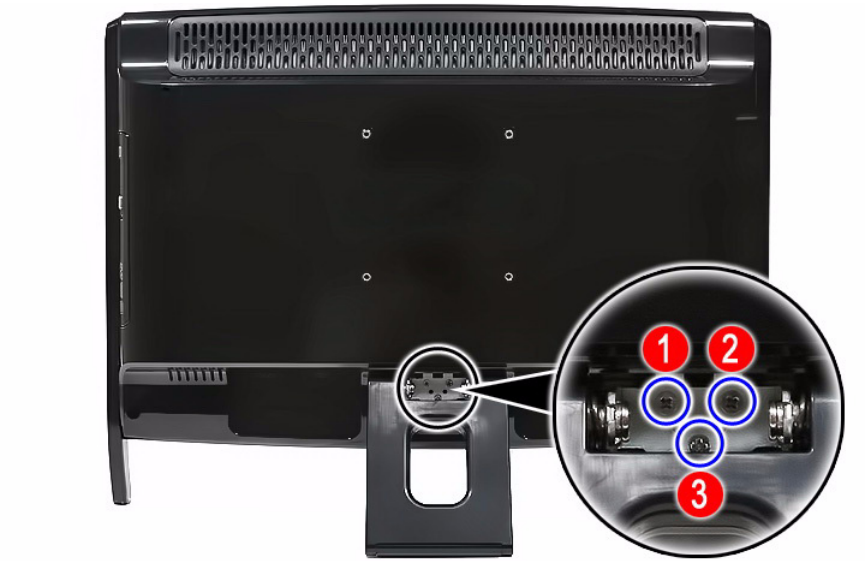
1. Make sure that the optical disc drive and the card reader slot are empty.
2. Turn off the power to the computer and all peripherals.
3. Unplug the power cord from the computer.
4. Unplug the network cable and all connected peripheral devices from the computer.
5. Place the computer on a flat, steady surface with the rear cover facing upward.

Disassembly Procedures

Removing the Computer Stand

1. Perform the “Pre-disassembly Procedure” on page 25.
2. Remove the plastic shell covering the computer stand screws.

3. Remove the screws securing the computer stand.



Quantity	Color	Torque	Part Number
3	Chrome	4.0 +/- 0.3 kgf-cm	86.00J97.668

4. Remove the computer stand.

Removing the Side Bars

1. Perform the “Pre-disassembly Procedure” on page 25.
2. Remove the screws securing the side bars.

Quantity	Color	Torque	Part Number
2	Black	4.0 +/- 0.3 kgf-cm	86.ZA324.8R0

3. Slide the side bars downward to disengage the bars' inner tabs from the chassis, then detach the bars.

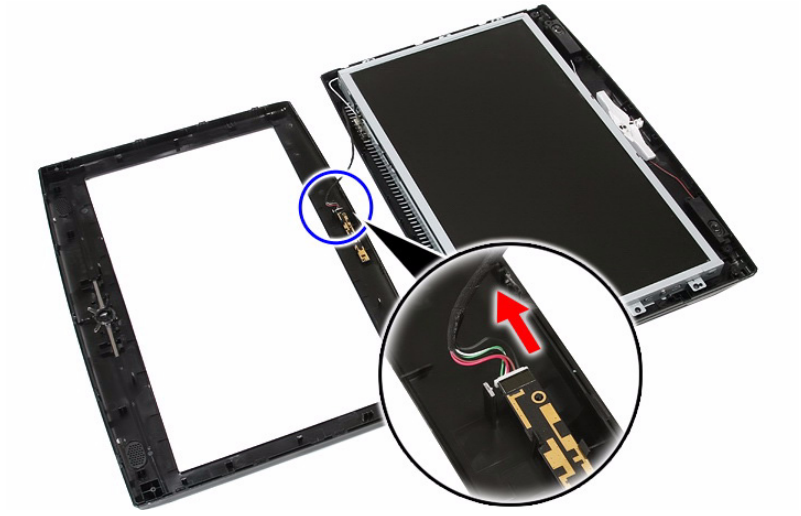
Removing the Front Bezel

1. Perform the "Pre-disassembly Procedure" on page 25.
2. Remove the side bars by following the procedure described on the previous section.
3. Use a flat screwdriver to pry off the front bezel from the rear cover.

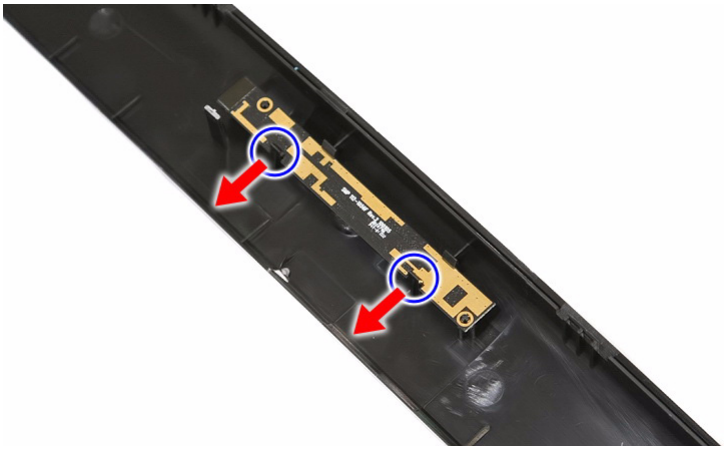
4. Detach the front bezel from the rear cover and turn it over to access the webcam cable.

Removing the Webcam Module

1. Remove the front bezel by following the procedure described on the previous section.
2. Disconnect the webcam cable from the webcam module.



3. Push the tabs securing the webcam module.



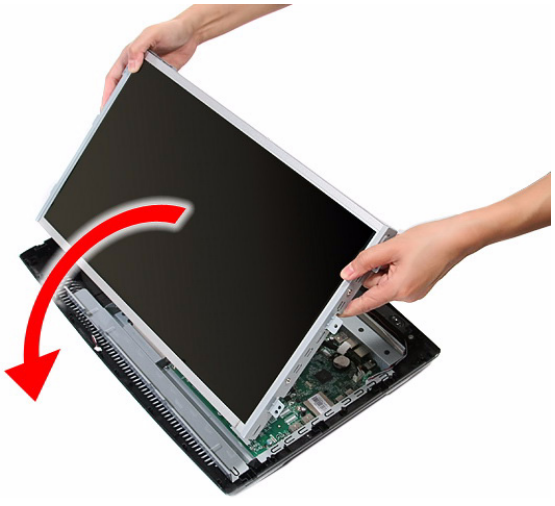
4. Remove the webcam module from the front bezel.

Removing the LCD Assembly

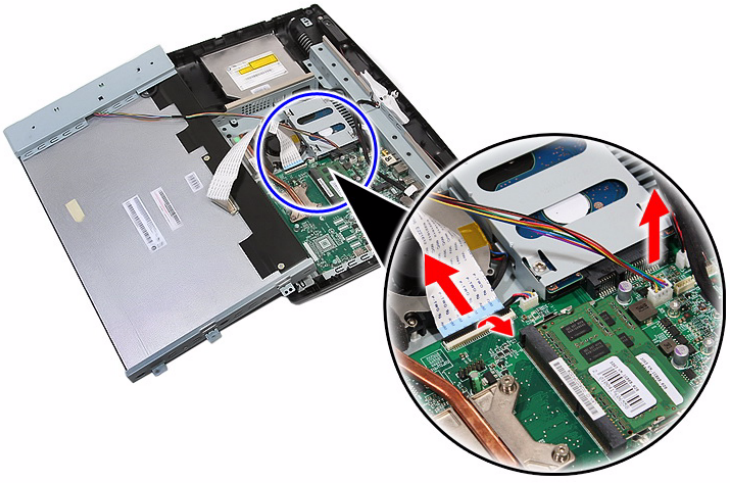
1. Remove the front bezel by following the procedure described on the page 28, then disconnect the disconnect the webcam cable from the webcam module.
2. Remove the screws securing the LCD assembly to the rear cover.

Quantity	Color	Torque	Part Number
6	Black	4.0 +/- 0.3 kgf.cm	86.ZA324.8R0

3. Detach the LCD assembly from the rear cover and turn it over to access the LCD panel cables.

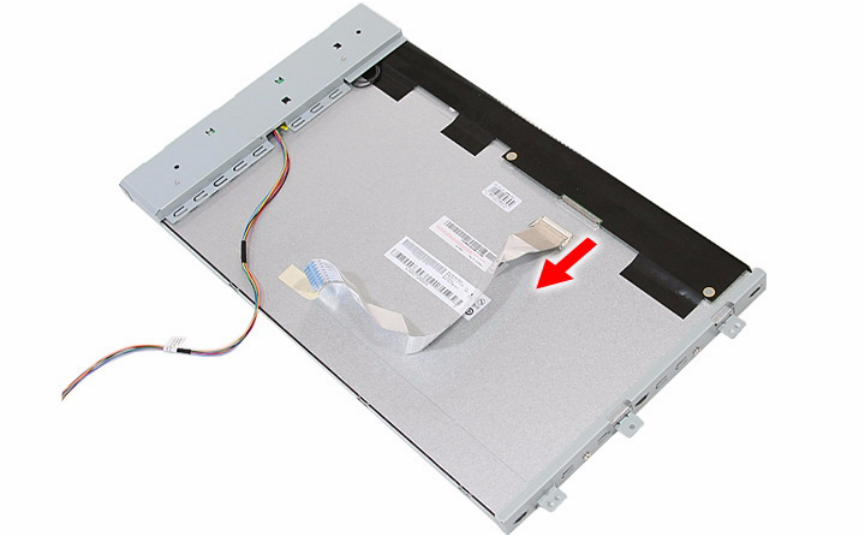


4. Disconnect the LCD and inverter cables from the mainboard.



Removing the LCD LVDS Cable

1. Remove the LCD assembly by following the procedure described on the previous section.
2. Disconnect the LCD cable from the LCD board.



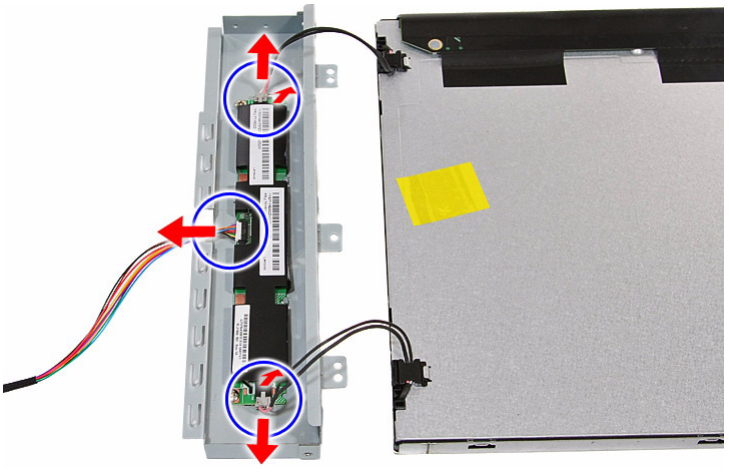
Removing the LCD Panel Bracket and Inverter Board

1. Remove the LCD assembly by following the procedure described on the page 30.
2. Remove the screws securing the LCD panel and inverter board brackets.

Quantity	Color	Torque	Part Number
4	Chrome	4.0 +/- 0.3 kgf.cm	86.00K96.644

3. Detach the LCD panel bracket from the LCD panel, then turn over the inverter board bracket to access the inverter board cables.

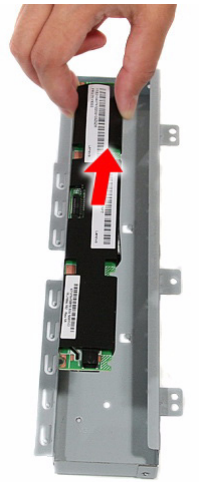
4. Disconnect the inverter board cables from the inverter board.



5. Remove the screws securing the inverter board.

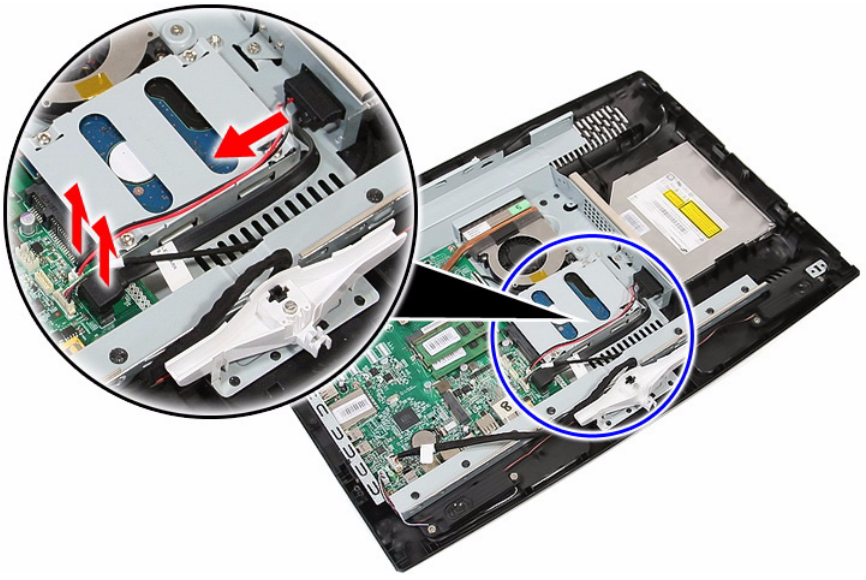
Quantity	Color	Torque	Part Number
2	Chrome	4.5 +/- 0.3 kgf.cm	86.7A554.6R0

6. Remove the inverter board cage from its bracket.



Removing the Optical Disc Drive

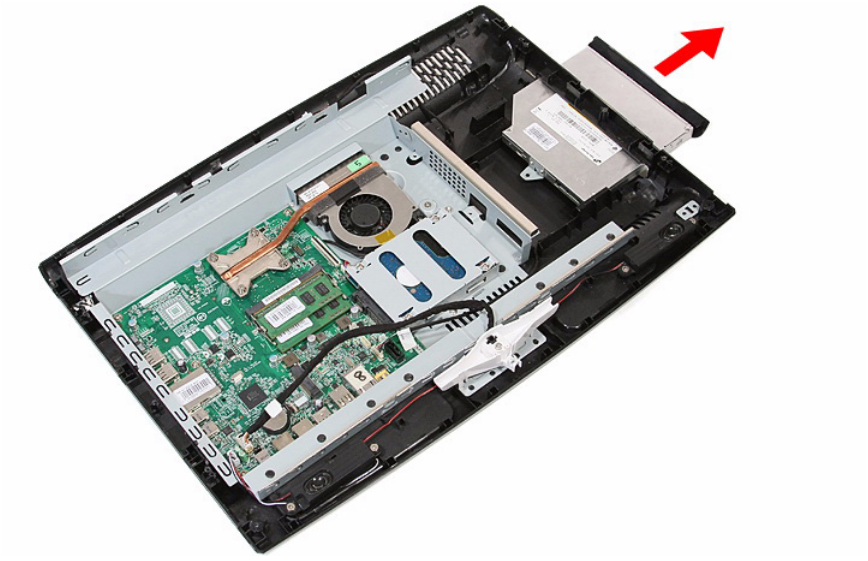
1. Remove the LCD assembly by following the procedure described on the page 30.
2. Disconnect the ODD power and data cables from the mainboard, then the ODD SATA cable from the ODD.



3. Remove the screw securing the ODD bracket to the chassis.

Quantity	Color	Torque	Part Number
1	Chrome	4.0 +/- 0.3 kgf.cm	86.00K96.644

4. Slide the ODD out of the rear cover.



5. Remove the screw securing the ODD bracket.

Quantity	Color	Torque	Part Number
2	Chrome	2.0 +/- 0.2 kgf.cm	86.00K77.223

6. Detach the ODD bezel from the module.

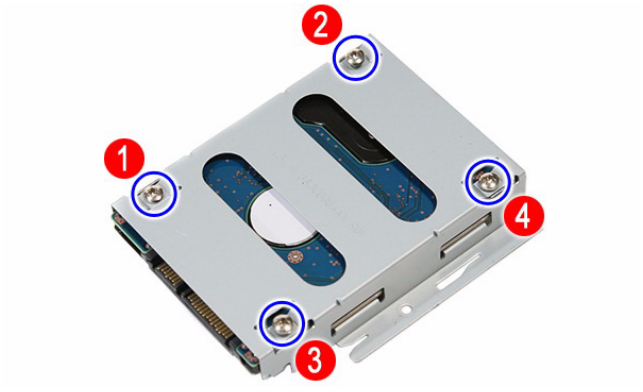
Removing the Hard Disk Drive

1. Remove the LCD assembly by following the procedure described on the page 30.
2. Remove the screw securing the HDD cage to the chassis.

Quantity	Color	Torque	Part Number
1	Chrome	4.5 +/- 0.3 kgf.cm	86.00K96.644

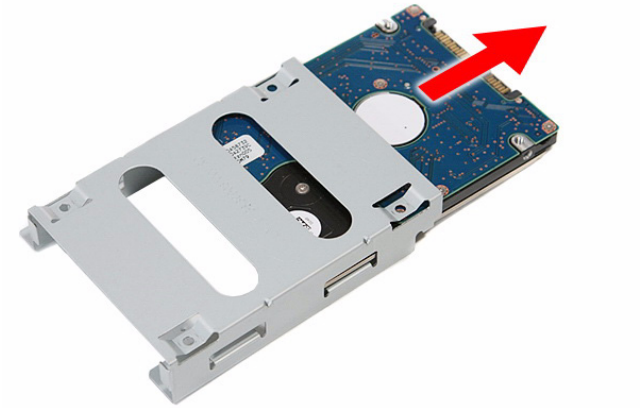
3. Slide the HDD assembly towards the ODD area to disengage the cage's tabs from the chassis, then remove the HDD assembly.

4. Remove the screws securing the hard drive to its cage.



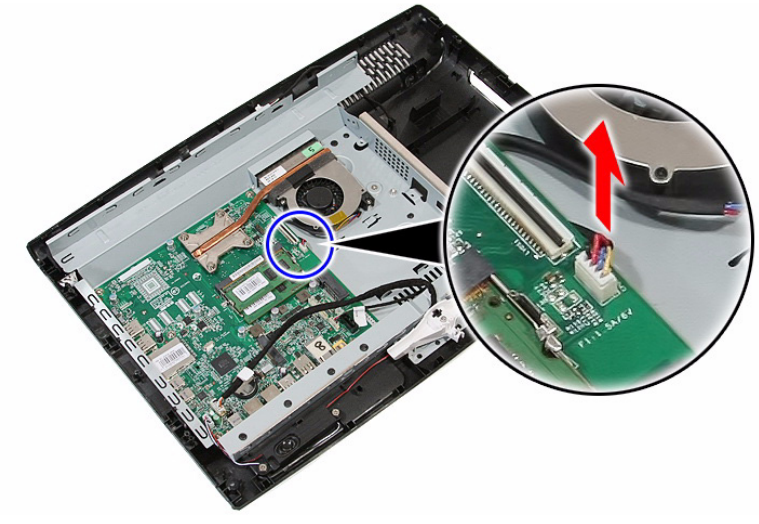
Quantity	Color	Torque	Part Number
4	Chrome	4.5 +/- 0.3 kgf.cm	86.00K96.644

5. Slide the hard drive out of its cage.



Removing the System Fan

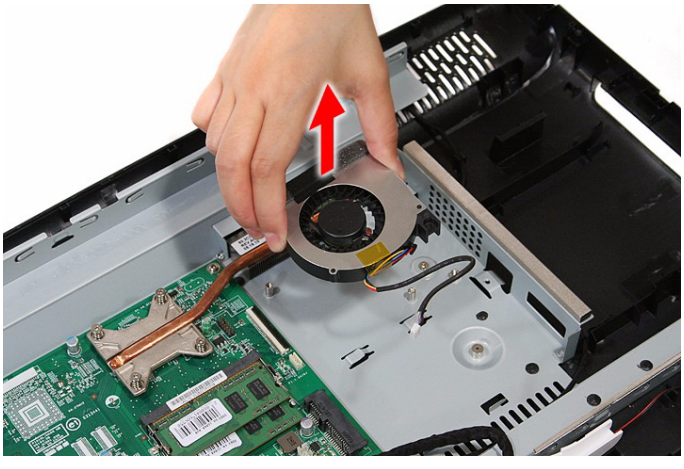
1. Remove the LCD assembly by following the procedure described on the page 30.
2. Disconnect the system fan cable from the mainboard.



3. Remove the screw securing the system fan.

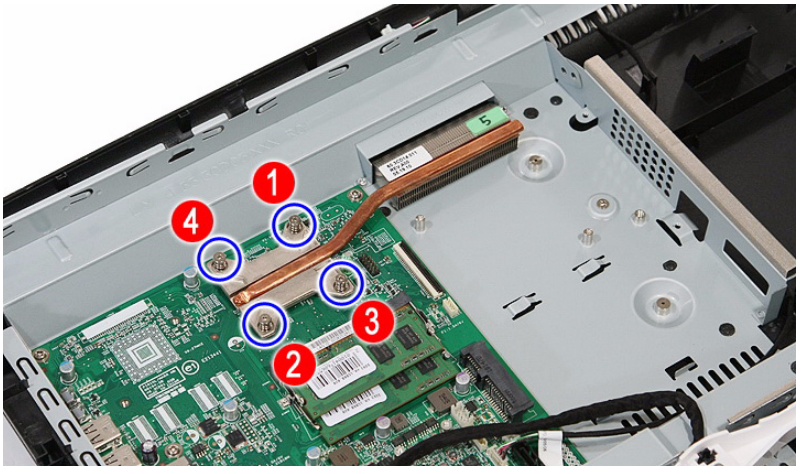
Quantity	Color	Torque	Part Number
2	Chrome	2.0 +/- 0.2 kgf.cm	86.7A122.4R0

4. Remove the system fan from the chassis.



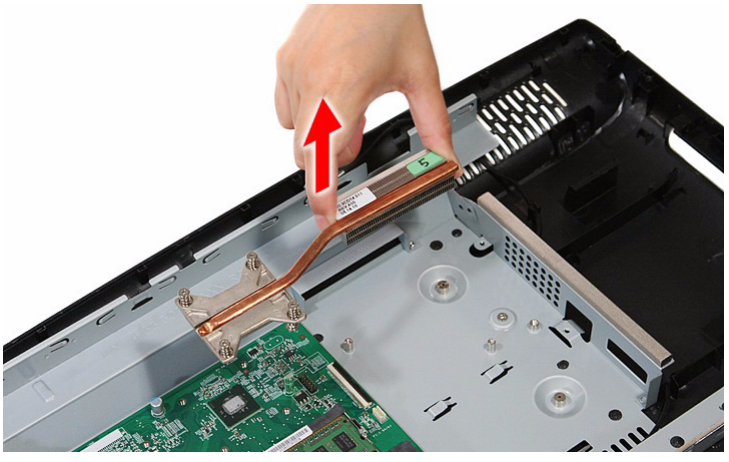
Removing the Heat Sink

1. Remove the LCD assembly by following the procedure described on the page 30.
2. Remove the system fan by following the procedure described on the previous section.
3. Loosen the screws securing the heat sink.



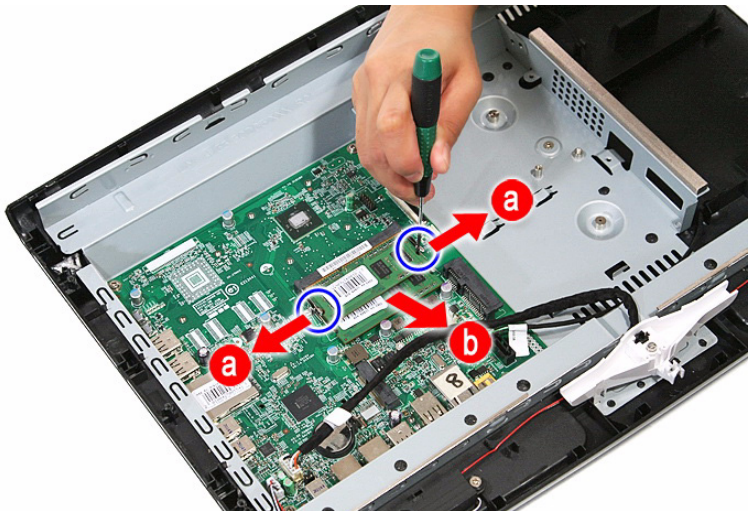
Quantity	Color	Torque
4	Chrome	4.5 +/- 0.3 kgf.cm

4. Remove the heat sink.



Removing the Memory Modules

1. Remove the LCD assembly by following the procedure described on the page 30.
2. Open the holding clips securing the memory modules (**a**), then remove the memory modules from the DIMM slots (**b**).



Removing the Webcam Cable

1. Remove the LCD assembly by following the procedure described on the page 30.
2. Disconnect the webcam cable from the mainboard.

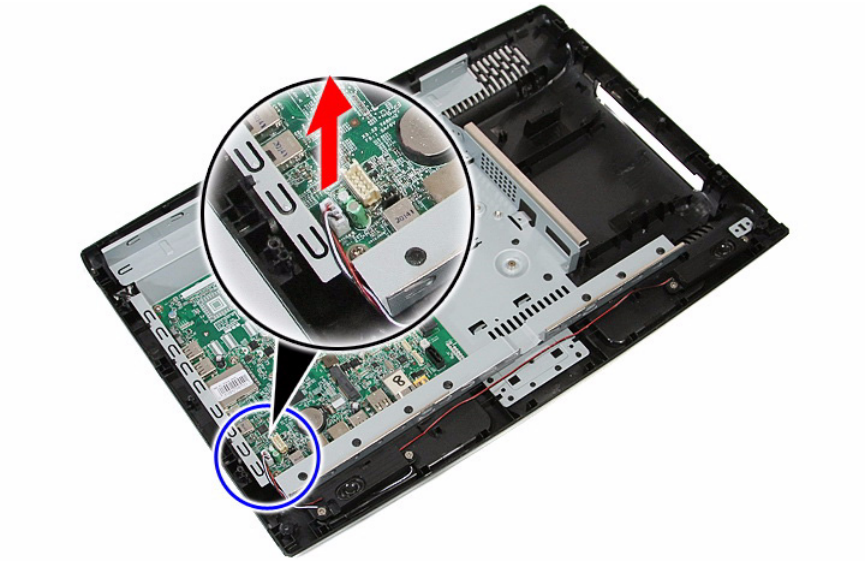
Removing the Power Button/LED Assembly

1. Remove the LCD assembly by following the procedure described on the page 30.
2. Disconnect the power button/LED cable from the mainboard.

3. Remove the power button/LED assembly from the front bezel.

Removing the Speakers

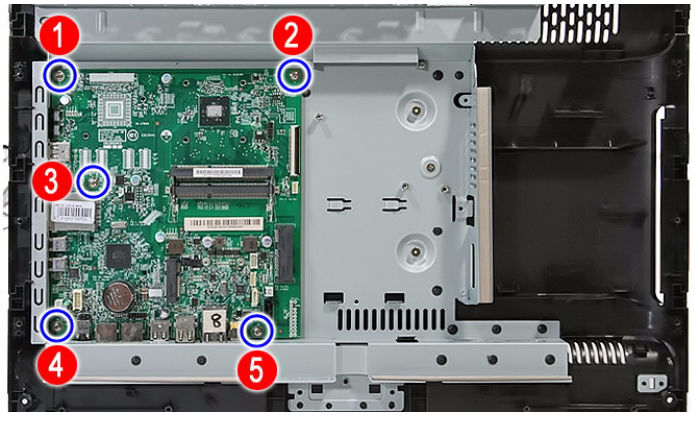
1. Remove the LCD assembly by following the procedure described on the page 30.
2. Disconnect the speaker cable from the mainboard.



3. Remove the speakers from the rear cover.

Removing the Mainboard

1. Remove the LCD assembly by following the procedure described on the page 30.
2. Remove the ODD by following the procedure described on the page 33.
3. Remove the HDD by following the procedure described on page 35.
4. Remove the system fan by following the procedure described on page 36.
5. Remove the heat sink by following the procedure described on page 38.
6. Remove the memory modules by following the procedure described on page 39.
7. Remove the webcam cable by following the procedure described on page 39.
8. Remove the power button/LED assembly by following the procedure described on page 40.
9. Remove the speakers by following the procedure described on page 41.
10. Remove the screws securing the mainboard.



Quantity	Color	Torque	Part Number
5	Chrome	4.5 +/- 0.3 kgf.cm	86.7A554.6R0

11. Remove the mainboard.

- A circuit board that is >10 cm^2 has been highlighted with a yellow rectangle as shown in the above image. Follow local regulations for disposing this type of circuit board.
- The RTC battery has been highlighted with a yellow circle in the above image. Detach the RTC battery and follow local regulations for disposing it.

Chapter 4

Troubleshooting

This chapter lists the POST error indicators and general troubleshooting instructions. Procedures for BIOS recovery and clearing CMOS data are also provided.

Hardware Diagnostic Procedure

1. Obtain as much detail as possible about the symptoms of the system failure.
2. Verify the symptoms by attempting to recreate the failure by running the diagnostic tests or repeating the same operation.
3. Refer to “Power System Check” procedure on the next section and the “BIOS Recovery” section on page 57 to determine which corrective action to take.

System Check Procedures

IMPORTANT The diagnostic tests described in this chapter are only intended to test Acer products. Non-Acer products, prototype cards, or modified options can give false errors and invalid system responses.

Power System Check

If the system can be powered on, skip this section. Proceed to the “System Internal Inspection” procedure on the next page.

If the system will not power on, do the following:

- Check if the power cable is properly connected to the AC power jack and a functional AC power source.
- Check if the voltage selector switch is set to the correct voltage setting.

System External Inspection

1. Inspect the power and LED indicators on the front panel. Go to “Front View” section on page 3 for the location and description of the LED behaviour.
2. Make sure that the ventilation slots on the rear panel are not blocked.
3. Make sure that there is no point of contact in the system that can cause a power short.

   If the cause of the failure is still can not be determined, perform the “System Internal Inspection” procedure described on the next page.

System Internal Inspection

1. Turn off the power to the computer and all peripherals.
2. Unplug the power cord from the computer.
3. Unplug the network cable and all connected peripheral devices from the computer.
4. Place the computer on a flat, steady surface.
5. Remove the TV stand and the rear cover.
6. Verify that the processor, memory module(s), and expansion board(s) are properly seated.
7. Verify that all power and data cables are firmly and properly attached to the installed drives.
8. Verify that all cable connections inside the system are firmly and properly attached to their appropriate mainboard connectors.
9. Verify that all components are Acer-qualified and supported.
10. Reinstall the rear cover and the TV stand.
11. Power on the system.

    If the cause of the failure is still can not be determined, review the POST messages and BIOS checkpoints during the system startup.

Checkpoints

A checkpoint is either a byte or word value output to I/O port 80h. The BIOS outputs checkpoints during bootblock and Power-On Self Test (POST) to indicate the task the system is currently executing. Checkpoints are very useful in aiding software developers or technicians in debugging problems that occur during the pre-boot process.

Viewing BIOS Checkpoints

Viewing all checkpoints generated by the BIOS requires a checkpoint card, also referred to as a POST card or POST diagnostic card. These are ISA or PCI add-in cards that show the value of I/O port 80h on a LED display. Checkpoints may appear on the bottom right corner of the screen during POST. This display method is limited, since it only displays checkpoints that occur after the video card has been activated.

NOTE Please note that checkpoints may differ between different platforms based on system configuration. Checkpoints may change due to vendor requirements, system chipset or option ROMs from add-in PCI devices.

Boot Block Initialization Code Checkpoints

The boot block initialization code sets up the chipset, memory, and other components before system memory is available. The following table describes the type of checkpoints that may occur during the boot block initialization portion of the BIOS.

Checkpoint	Description
Before D1	Early chipset initialization is done. Early super I/O initialization is done including RTC and keyboard controller. NMI is disabled.
D1	Perform keyboard controller BAT test. Check if waking up from power management suspend state. Save power-on CPUID value in scratch CMOS.
D0	Go to flat mode with 4GB limit and GA20 enabled. Verify the bootblock checksum.
D2	Disable CACHE before memory detection. Execute full memory sizing module. Verify that flat mode is enabled.
D3	If memory sizing module not executed, start memory refresh and do memory sizing in bootblock code. Do additional chipset initialization. Re-enable CACHE. Verify that flat mode is enabled.

Checkpoint	Description
D4	Test base 512 KB memory. Adjust policies and cache first 8 MB. Set stack.
D5	Bootblock code is copied from ROM to lower system memory and control is given to it. BIOS now executes out of RAM.
D6	Both key sequence and OEM specific method is checked to determine if BIOS recovery is forced. Main BIOS checksum is tested. If BIOS recovery is necessary, control flows to checkpoint E0. See the “Boot Block Recovery Code Checkpoints” section for more information.
D7	Restore CPUID value back into register. The Bootblock Runtime interface module is moved to system memory and control is given to it. Determine whether to execute serial flash.
D8	The Runtime module is uncompressed into memory. CPUID information is stored in memory.
D9	Store the Uncompressed pointer for future use in PMM. Copying Main BIOS into memory. Leaves all RAM below 1 MB Read-Write including E000 and F000 shadow areas but closing SMRAM.
DA	Restore CPUID value back into register. Give control to BIOS POST (ExecutePOSTKernel). See the “POST Code Checkpoints” section for more information.

Boot Block Recovery Code Checkpoints

The boot block recovery code gets control when the BIOS determines that a BIOS recovery is required because the user has forced the update or the BIOS checksum is corrupt. Refer to “BIOS Recovery” section on page 57 for more information. The following table describes the type of checkpoints that may occur during the boot block recovery portion of the BIOS.

Checkpoint	Description
E0	Initialize the floppy controller in the super I/O. Some interrupt vectors are initialized. DMA controller is initialized. 8259 interrupt controller is initialized. L1 cache is enabled.
E9	Set up floppy controller and data. Attempt to read from floppy.
EA	Enable ATAPI hardware. Attempt to read from ARMD and ATAPI CDROM.
EB	Disable ATAPI hardware. Jump back to checkpoint E9.
EF	Read error occurred on media. Jump back to checkpoint EB.
E9 or EA	Determine information about root directory of recovery media.
F0	Search for pre-defined recovery file name in root directory.
F1	Recovery file not found.
F2	Start reading FAT table and analyze FAT to find the clusters occupied by the recovery file.
F3	Start reading the recovery file cluster by cluster.
F5	Disable L1 cache.
FA	Check the validity of the recovery file configuration to the current configuration of the flash part.
FB	Make flash write enabled through chipset and OEM specific method. Detect proper flash part. Verify that the found flash part size equals the recovery file size.
F4	The recovery file size does not equal the found flash part size.
FC	Erase the flash part.
FD	Program the flash part.
FF	The flash has been updated successfully. Make flash write disabled. Disable ATAPI hardware. Restore CPUID value back into register. Give control to F000 ROM at F000:FFF0h.

POST Code Checkpoints

The POST code checkpoints are the largest set of checkpoints during the BIOS preboot process. The following table describes the type of checkpoints that may occur during the POST portion of the BIOS.

Checkpoint	Description
03	Disable NMI, Parity, video for EGA, and DMA controllers. Initialize BIOS, POST, Runtime data area. Also initialize BIOS modules on POST entry and GPNV area. Initialized CMOS as mentioned in the Kernel Variable "wCMOSFlags."
04	Check CMOS diagnostic byte to determine if battery power is OK and CMOS checksum is OK. Verify CMOS checksum manually by reading storage area. If the CMOS checksum is bad, update CMOS with power-on default values and clear passwords. Initialize status register A. Initializes data variables that are based on CMOS setup questions. Initializes both the 8259 compatible PICs in the system
05	Initializes the interrupt controlling hardware (generally PIC) and interrupt vector table.
06	Do R/W test to CH-2 count reg. Initialize CH-0 as system timer.Install the POSTINT1Ch handler. Enable IRQ-0 in PIC for system timer interrupt. Traps INT1Ch vector to "POSTINT1ChHandlerBlock."
08	Initializes the CPU. The BAT test is being done on KBC. Program the keyboard controller command byte is being done after Auto detection of KB/MS using AMI KB-5.
0A	Initializes the 8042 compatible Key Board Controller.
0B	Detects the presence of PS/2 mouse.
0C	Detects the presence of Keyboard in KBC port.
0E	Testing and initialization of different Input Devices. Also, update the Kernel Variables. Traps the INT09h vector, so that the POST INT09h handler gets control for IRQ1. Uncompress all available language, BIOS logo, and Silent logo modules.
13	Early POST initialization of chipset registers.
24	Uncompress and initialize any platform specific BIOS modules. GPNV is initialized at this checkpoint.
30	Initialize System Management Interrupt.
2A	Initializes different devices through DIM. See DIM Code Checkpoints section for more information.
2C	Initializes different devices. Detects and initializes the video adapter installed in the system that have optional ROMs.
2E	Initializes all the output devices.
31	Allocate memory for ADM module and uncompress it. Give control to ADM module for initialization. Initialize language and font modules for ADM. Activate ADM module.
33	Initializes the silent boot module. Set the window for displaying text information.
37	Displaying sign-on message, CPU information, setup key message, and any OEM specific information.
38	Initializes different devices through DIM. See DIM Code Checkpoints section for more information. USB controllers are initialized at this point.
39	Initializes DMAC-1 & DMAC-2.
3A	Initialize RTC date/time.
3B	Test for total memory installed in the system. Also, Check for DEL or ESC keys to limit memory test. Display total memory in the system.

Checkpoint	Description
3C	Mid POST initialization of chipset registers.
40	Detect different devices (Parallel ports, serial ports, and coprocessor in CPU, ... etc.) successfully installed in the system and update the BDA, EBDA…etc.
50	Programming the memory hole or any kind of implementation that needs an adjustment in system RAM size if needed.
52	Updates CMOS memory size from memory found in memory test. Allocates memory for Extended BIOS Data Area from base memory. Programming the memory hole or any kind of implementation that needs an adjustment in system RAM size if needed.
60	Initializes Num-Lock status and programs the KBD typematic rate.
75	Initialize Int-13 and prepare for IPL detection.
78	Initializes IPL devices controlled by BIOS and option ROMs.
7A	Initializes remaining option ROMs.
7C	Generate and write contents of ESCD in NVRam.
84	Log errors encountered during POST.
85	Display errors to the user and gets the user response for error.
87	Execute BIOS setup if needed / requested. Check boot password if installed.
8C	Late POST initialization of chipset registers.
8E	Program the peripheral parameters. Enable/Disable NMI as selected.
90	Late POST initialization of system management interrupt.
A0	Check boot password if installed.
A1	Clean-up work needed before booting to OS.
A2	Takes care of runtime image preparation for different BIOS modules. Fill the free area in F000h segment with 0FFh. Initializes the Microsoft IRQ Routing Table. Prepares the runtime language module. Disables the system configuration display if needed.
A4	Initialize runtime language module. Display boot option popup menu.
A7	Displays the system configuration screen if enabled. Initialize the CPU's before boot, which includes the programming of the MTRR's.
A8	Prepare CPU for OS boot including final MTRR values.
A9	Wait for user input at config display if needed.
AA	Uninstall POST INT1Ch vector and INT09h vector. Deinitializes the ADM module.
AB	Prepare BBS for Int 19 boot.
AC	End of POST initialization of chipset registers.
B1	Save system context for ACPI.
00	Passes control to OS Loader (typically INT19h).

DIM Code Checkpoints

The Device Initialization Manager (DIM) gets control at various times during BIOS POST to initialize different system busses. The following table describes the main checkpoints where the DIM module is accessed.

Checkpoint	Description
2A	Initialize different buses and perform the following functions: Reset, Detect, and Disable (function 0); Static Device Initialization (function 1); Boot Output Device Initialization (function 2). Function 0 disables all device nodes, PCI devices, and PnP ISA cards. It also assigns PCI bus numbers. Function 1 initializes all static devices that include manual configured onboard peripherals, memory and I/O decode windows in PCI-PCI bridges, and noncompliant PCI devices. Static resources are also reserved. Function 2 searches for and initializes any PnP, PCI, or AGP video devices.
38	Initialize different buses and perform the following functions: Boot Input Device Initialization (function 3); IPL Device Initialization (function 4); General Device Initialization (function 5). Function 3 searches for and configures PCI input devices and detects if system has standard keyboard controller. Function 4 searches for and configures all PnP and PCI boot devices. Function 5 configures all onboard peripherals that are set to an automatic configuration and configures all remaining PnP and PCI devices.

POST Error Indicators

When a system error is detected during POST (Power On Self Text), the Setup utility will switch to diagnostic mode and display a POST error message.

POST error messages tell users what failure the system has detected. Some error messages could be related to a hardware device. Others may indicate a problem with a device configuration. In some cases an error message may include recommendations for troubleshooting or require that you press the **Enter** key to display recommendations. Follow the instructions on the screen. It is recommended that you correct the error before proceeding, even if the computer appears to boot successfully.

IMPORTANT If your system fails after you make changes in the Setup menus, reboot the computer, enter Setup again and load Setup defaults to correct the error.

Memory

Message	Description
Gate20 Error	The BIOS is unable to properly control the mainboard's Gate A20 function, which controls access of memory over 1 MB. This may indicate a problem with the mainboard.
Multi-Bit ECC Error	This message will only occur on systems using ECC enabled memory modules. ECC memory has the ability to correct single-bit errors that may occur from faulty memory modules. A multiple bit corruption of memory has occurred, and the ECC memory algorithm cannot correct it. This may indicate a defective memory module.
Parity Error	Fatal Memory Parity Error. System halts after displaying this message.
RAM R/W test failed	This message is displayed by the AMIBIOS8 when the RAM read/write test fails.
CMOS Memory Size Wrong	The base memory (memory below 1MB) size that is reported in the CMOS (offset 15h) mismatches with the actual size detected. This condition may occur when the hole is set at 512K base memory or when CMOS is corrupted.

Boot

Message	Description
Boot Failure...	This is a generic message indicating the BIOS could not boot from a particular device. This message is usually followed by other information concerning the device.
Invalid Boot Diskette	A diskette was found in the drive, but it is not configured as a bootable diskette.
Drive Not Ready	The BIOS was unable to access the drive because it indicated it was not ready for data transfer. This is often reported by drives when no media is present.
A: Drive Error	The BIOS attempted to configure the A: drive during POST, but was unable to properly configure the device. This may be due to a bad cable or faulty diskette drive.
B: Drive Error	The BIOS attempted to configure the B: drive during POST, but was unable to properly configure the device. This may be due to a bad cable or faulty diskette drive.
Insert BOOT diskette in A:	The BIOS attempted to boot from the A: drive, but could not find a proper boot diskette. Reboot and Select proper Boot device or Insert Boot Media in selected Boot device BIOS could not find a bootable device in the system and/or removable media drive does not contain media.
Reboot and select proper boot device or Insert boot media in selected boot device	BIOS could not find a bootable device in the system and/or removable media drive does not contain media.
NO ROM BASIC	This message occurs on some systems when no bootable device can be detected.

Storage Device

Message	Description
Primary Master Hard Disk Error	The IDE/ATAPI device configured as Primary Master could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
Primary Slave Hard Disk Error	The IDE/ATAPI device configured as Primary Slave could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
Secondary Master Hard Disk Error	The IDE/ATAPI device configured as Secondary Master could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
Secondary Slave Hard Disk Error	The IDE/ATAPI device configured as Secondary Slave could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
3rd Master Hard Disk Error	The IDE/ATAPI device configured as Master in the 3rd IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
3rd Slave Hard Disk Error	The IDE/ATAPI device configured as Slave in the 3rd IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
4th Master Hard Disk Error	The IDE/ATAPI device configured as Master in the 4th IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
4th Slave Hard Disk Error	The IDE/ATAPI device configured as Slave in the 4th IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.

Message	Description
5th Master Hard Disk Error	The IDE/ATAPI device configured as Master in the 5th IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
5th Slave Hard Disk Error	The IDE/ATAPI device configured as Slave in the 5th IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
6th Master Hard Disk Error	The IDE/ATAPI device configured as Master in the 6th IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
6th Slave Hard Disk Error	The IDE/ATAPI device configured as Slave in the 6th IDE controller could not be properly initialized by the BIOS. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
Primary Master Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Primary Master failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
Primary Slave Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Primary Slave failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
Secondary Master Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Secondary Master failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
Secondary Slave Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Secondary Slave failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
3rd Master Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Master in the 3rd IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
3rd Slave Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Slave in the 3rd IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
4th Master Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Master in the 4th IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
4th Slave Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Slave in the 4th IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
5th Master Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Master in the 5th IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
5th Slave Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Slave in the 5th IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
6th Master Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Master in the 6th IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
6th Slave Drive - ATAPI Incompatible	The IDE/ATAPI device configured as Slave in the 6th IDE controller failed an ATAPI compatibility test. This message is typically displayed when the BIOS is trying to detect and configure IDE/ATAPI devices in POST.
S.M.A.R.T. Capable but Command Failed	The BIOS tried to send a S.M.A.R.T. message to a hard disk, but the command transaction failed. This message can be reported by an ATAPI device using the S.M.A.R.T. error reporting standard. S.M.A.R.T. failure messages may indicate the need to replace the hard disk.

Message	Description
S.M.A.R.T. Command Failed	The BIOS tried to send a S.M.A.R.T. message to a hard disk, but the command transaction failed. This message can be reported by an ATAPI device using the S.M.A.R.T. error reporting standard. S.M.A.R.T. failure messages may indicate the need to replace the hard disk.
S.M.A.R.T. Status BAD, Backup and Replace	A S.M.A.R.T. capable hard disk sends this message when it detects an imminent failure.This message can be reported by an ATAPI device using the S.M.A.R.T. error reporting standard. S.M.A.R.T. failure messages may indicate the need to replace the hard disk.
S.M.A.R.T. Capable and Status BAD	A S.M.A.R.T. capable hard disk sends this message when it detects an imminent failure. This message can be reported by an ATAPI device using the S.M.A.R.T. error reporting standard. S.M.A.R.T. failure messages may indicate the need to replace the hard disk.

Virus-related

Message	Description
BootSector Write!!	The BIOS has detected software attempting to write to a drive's boot sector. This is flagged as possible virus activity. This message will only be displayed if Virus Detection is enabled in AMIBIOS setup.
VIRUS: Continue (Y/N)?	If the BIOS detects possible virus activity, it will prompt the user. This message will only be displayed if Virus Detection is enabled in AMIBIOS setup.

System Configuration

Message	Description
DMA-1 Error	Error initializing primary DMA controller. This is a fatal error, often indication a problem with system hardware.
DMA-2 Error	Error initializing secondary DMA controller. This is a fatal error, often indication a problem with system hardware.
DMA Controller Error	POST error while trying to initialize the DMA controller. This is a fatal error, often indication a problem with system hardware.
Checking NVRAM... Update Failed	BIOS could not write to the NVRAM block. This message appears when the FLASH part is write-protected or if there is no FLASH part (System uses a PROM or EPROM).
Microcode Error	BIOS could not find or load the CPU Microcode Update to the CPU. This message only applies to INTEL CPUs. The message is most likely to appear when a brand new CPU is installed in a mainboard with an outdated BIOS. In this case, the BIOS must be updated to include the Microcode Update for the new CPU.
NVRAM Checksum Bad, NVRAM Cleared	There was an error in while validating the NVRAM data. This causes POST to clear the NVRAM data.
Resource Conflict	More than one system device is trying to use the same non-shareable resources (Memory or I/O).
NVRAM Ignored	The NVRAM data used to store Plug'n'Play (PnP) data was not used for system configuration in POST.
NVRAM Bad	The NVRAM data used to store Plug'n'Play (PnP) data was not used for system configuration in POST due to a data error.
Static Resource Conflict	Two or more Static Devices are trying to use the same resource space (usually Memory or I/O).
PCI I/O conflict	A PCI adapter generated an I/O resource conflict when configured by BIOS POST.

Message	Description
PCI ROM conflict	A PCI adapter generated an I/O resource conflict when configured by BIOS POST.
PCI IRQ conflict	A PCI adapter generated an I/O resource conflict when configured by BIOS POST.
PCI IRQ routing table error	BIOS POST (DIM code) found a PCI device in the system but was unable to figure out how to route an IRQ to the device. Usually this error is causing by an incomplete description of the PCI Interrupt Routing of the system.
Timer Error	Indicates an error while programming the count register of channel 2 of the 8254 timer. This may indicate a problem with system hardware.
Refresh timer test failed	BIOS POST found that the refresh timer hardware failed to pass the Refresh Retrace Test.
Interrupt Controller-1 error	BIOS POST could not initialize the Master Interrupt Controller. This may indicate a problem with system hardware.
Interrupt Controller-2 error	BIOS POST could not initialize the Slave Interrupt Controller. This may indicate a problem with system hardware.

CMOS

Message Displayed	Description
CMOS Date/Time Not Set	The CMOS date and/or time are invalid. This error can be resolved by readjusting the system time in AMIBIOS Setup.
CMOS Battery Low	CMOS battery is low. This message usually indicates that the CMOS battery needs to be replaced. It could also appear when the user intentionally discharges the CMOS battery.
CMOS Settings Wrong	CMOS settings are invalid. This error can be resolved by using AMIBIOS Setup.
CMOS Checksum Bad	CMOS contents failed the Checksum check. Indicates that the CMOS data has been changed by a program other than the BIOS or that the CMOS is not retaining its data due to malfunction. This error can typically be resolved by using AMIBIOS Setup.

Miscellaneous

Message Displayed	Description
KBC BAT Test failed	Keyboard controller BAT test failed. This may indicate a problem with keyboard controller initialization.
Keyboard Error	Keyboard is not present or the hardware is not responding when the keyboard controller is initialized.
PS/2 Keyboard not found	PS/2 keyboard support is enabled in the BIOS setup but the device is not detected.
PS/2 Mouse not found	PS/2 mouse support is enabled in the BIOS setup but the device is not detected.
Keyboard/Interface Error	Keyboard controller failure. This may indicate a problem with system hardware.
Unlock Keyboard	PS/2 keyboard is locked. User needs to unlock the keyboard to continue the BIOS POST.
System Halted	The system has been halted. A reset or power cycle is required to reboot the machine. This message appears after a fatal error has been detected.
<INS> Pressed	Indicates that <INS> key is pressed during the BIOS POST. The POST will load and use default CMOS settings.
Password check failed	The password entered does not match the password set in the setup. This condition may occur for both Supervisor and User password verification.

Message Displayed	Description
Unknown BIOS error. Error code = 004Ah	This message is displayed when ADM module is not present in the AMIBIOS8 ROM.
Unknown BIOS error. Error code = 004Bh	This message is displayed when language module is not present in the AMIBIOS8 ROM.
Floppy Controller Failure	Error in initializing legacy Floppy Controller.

Index of Symptom-to-FRU Error Messages

To use the information in this section to diagnose a problem:

1. Find the error symptom in the left column.
2. If directed to a check procedure, replace the FRU indicated in the check procedure.

   If no check procedure is indicated, the first Action/FRU item listed in the right column is the most likely cause.

NOTE If you cannot find a symptom or an error in this list and the problem remains, see “Undetermined Problems” on page 65.

Processor/Processor Fan-related Symptoms

Symptom/Error	Action/FRU
Processor fan does not run but power supply fan runs.	• Ensure the system is not in power saving mode. • With the system powered on, measure the voltage of the processor fan connector. Its reading should be +12Vdc. If the reading shows normal, but the fan still does not work, then replace the heat sink fan. • Mainboard
Processor test failed.	• Processor • Mainboard

NOTE Normally, the processor fan should be operative, and the processor clock setting should be exactly set to match its speed requirement before diagnosing any processor problems.

Mainboard and Memory-related Symptoms

Symptom/Error	Action/FRU
Memory test failed.	• Memory module • Mainboard
Incorrect memory size shown or repeated during POST.	• Insert the memory modules in the DIMM sockets properly, then reboot the system. • Memory module • Mainboard
System works but fails to enter power saving mode when the Power Management Mode is set to Enabled.	• Enter CMOS Setup and load the default settings. In Windows systems, check settings in Power Management Property of the Control Panel. • Reload software from Recovery CD.
Blinking cursor only; system does not work.	• IDE drive connection/cables • IDE disk drives • See “Undetermined Problems”. • Mainboard

NOTE Ensure the memory modules are installed properly and the contact leads are clean before diagnosing any system problems.

Hard Disk Drive-related Symptoms

Symptom/Error	Action/FRU
Hard disk drive test failed.	• Enter CMOS Setup and load the default settings. • Hard disk drive cable • Hard disk drive • Mainboard
Hard disk drive cannot format completely.	• Enter CMOS Setup and load the default settings. • Hard disk drive cable • Hard disk drive • Mainboard
Hard disk drive has write error.	• Enter CMOS Setup and load the default settings. • Hard disk drive
Hard disk drive LED fails to light, but system operates normally.	• With the system power on, measure the voltage of the HDD LED connector. • HDD LED cable

NOTE Make sure the hard disk drive is configured correctly in CMOS Setup and that cable/jumper are set correctly before diagnosing any hard disk drive problems. (If only one drive is installed, please make sure the drive is connected to master connector or the drive is set to master.)

Optical Disc Drive-related Symptoms

Symptom/Error	Action/FRU
CD/DVD-ROM drive LED doesn't come on but works normally.	• Enter CMOS Setup and load the default settings. • DIMM • Mainboard
CD/DVD-ROM drive LED flashes for more than 30 seconds before LED shutting off. Software asks to reinstall disc. Software displays a reading CD/DVD error.	• CD/DVD-ROM may have dirt or foreign material on it. Check with a known good disc. • CD/DVD-ROM is not inserted properly. • CD/DVD-ROM is damaged.
CD/DVD-ROM drive cannot load or eject when the system is turned on and its eject button is pressed and held.	• Disconnect all cables from CD/DVD-ROM drive except power cable, then press the eject button to try to unload the disc. • CD/DVD-ROM drive power cable • CD/DVD-ROM drive
CD/DVD-ROM drive does not read and there are no messages are displayed.	• CD may have dirt or foreign material on it. Check with a known good disc. • Ensure the CD/DVD-ROM driver is installed properly. • CD/DVD-ROM drive.
CD/DVD-ROM drive can play audio CD but no sound output.	• Turn up the sound volume. • Speaker power/connection/cable. • CD/DVD-ROM drive.

NOTE Make sure the optical disc drive is configured correctly in CMOS Setup, the cable/jumper are set correctly and the drive's optical lens is clean before diagnosing any optical drive problems.

Real-Time Clock-related Symptoms

Symptom/Error	Action/FRU
Real-time clock is inaccurate.	• Ensure the information in the Standard CMOS Feature of BIOS Setup is set correctly. • RTC battery • Mainboard

Audio-related Symptoms

Symptom/Error	Action/FRU
Audio software program invoked but no sound comes from speakers.	• Speaker power/connection/cable

Modem-related Symptoms

Symptom/Error	Action/FRU
Modem ring cannot wake up system from suspend mode.	• For an external modem, make sure Power on By Ring in BIOS Setup or Power Management is set to Enabled. For the PCI modem, make sure Wake up by PCI card is set to Enabled. • If a PCI modem card is used, reinsert the modem card to the PCI slot firmly or replace the modem card. • In Win 98, ensure the telephone application is configured correctly for your modem and set to receive messages and/or fax.
Data/fax modem software program invoked but cannot receive/send data/fax	• Ensure the modem card is installed properly.
Fax/voice modem software program invoked but has no sound output. (Data files are received normally; voice from modem cannot be produced, but system sound feature works normally.)	• Ensure the modem voice-in cable from modem adapter card is connected to the mainboard

Video and Monitor-related Symptoms

Symptom/Error	Action/FRU
Video memory test failed.Video adapter failed.	• Remove all non-factory-installed cards. • Load default settings (if screen is readable). • Mainboard
Display problem • Incorrect colors • No high intensity • Missing, broken, or incorrect characters • Blank monitor (dark) • Blank monitor (bright) • Distorted image • Unreadable monitor	• Monitor signal connection/cable • Monitor • Video adapter card • Mainboard
Display changing colors.	• Monitor signal connection/cable • Video adapter card • Mainboard

Printer-related Symptoms

Symptom/Error	Action/FRU
Printing failed.	• Ensure the printer driver is properly installed. Refer to the printer service manual. • Printer • Printer cable • Mainboard.
Printer problems.	• Refer to the service manual for the printer.

Keyboard-related Symptoms

Symptom/Error	Action/FRU
Some or all keys on keyboard do not work.	• Keyboard

Power-related Symptoms

Symptom/Error	Action/FRU
Pressing the power button does not turn off the system. (Only unplugging the power cord from electrical outlet can turn off the system.)	• Ensure the Soft-off by PWR-BTTN in CMOS Setup (under Power Management) is not set to Instant-off. • Power switch cable assembly
Pressing the power button does not turn on the system	• Power switch cable assembly.
Executing software shutdown from Windows98 Start menu does not turn off the system. (Only pressing power button can turn off the system).	• Enter CMOS Setup and load the default settings. • Reload software from Recovery CD.
No system power	Mainboard

BIOS Recovery

When you boot up the computer and you hear one long beep, followed by a shorter one, the system BIOS is damaged. This maybe cause by an interruption during a BIOS flash procedure (e.g. a power outage) or a corrupted BIOS code, which will cause the system to go into an unbootable state.You need to access and execute the boot block program to reboot the computer and recover the regular BIOS code.

Note the following when restoring the BIOS settings:

- Make sure the computer is connected to a UPS unit during the BIOS recovery process.
- The BIOS crisis recovery disk should be prepared in a computer running the Windows XP or Windows Vista OS.

Creating the BIOS Crisis Recovery Disk

1. Prepare a removable USB storage device with a capacity size greater than 10 MB.

   Note that all data on the USB storage device will be cleared during the creation of the crisis disk.
2. Set up a computer running the Windows XP or Windows Vista operating system and plug in the USB storage device into an available USB port.
3. Copy the target BIOS ROM file to the USB storage device and rename it as “amiboot.rom”.
4. Unplug the USB storage device.
5. Eject the removable USB storage device from the computer.

Performing a BIOS Recovery

1. Shut down the BIOS failed-computer.
2. Connect the USB storage device containing the “amiboot.rom” file to the failed computer.
3. Press the power button to turn on the computer.

   The system will now execute the BIOS recovery process. When the process is complete, four short beeps will be emitted and the computer will automatically reboot.
4. Disconnect the USB storage device from the computer.
5. Press **Delete** to run the CMOS Setup Utility.
6. Press **F9** to load the system default settings.
7. Select **Ok**, then press **Enter**.
8. Press **F9** to save the default settings and close the Setup utility.
9. Select **Ok**, then press **Enter**.

Clearing CMOS

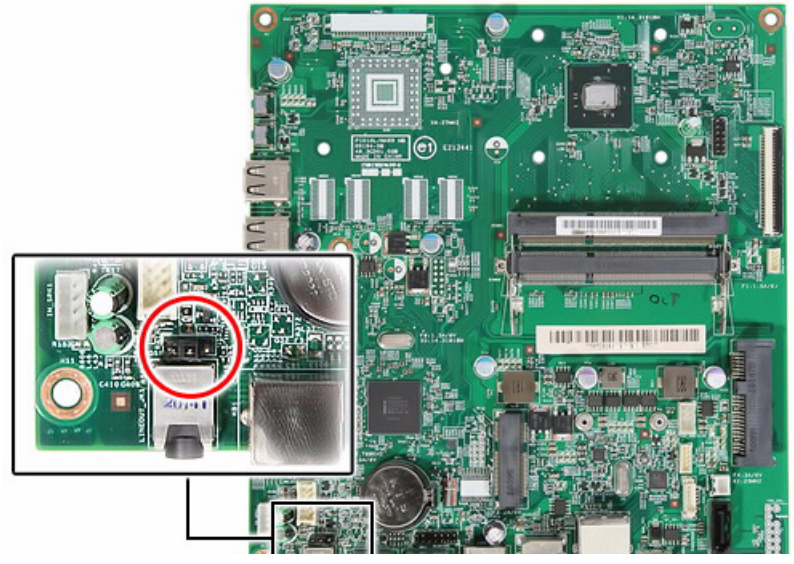
You may need to clear the Setup configuration values (CMOS) if the configuration has been corrupted, or if incorrect settings made in the Setup Utility caused error messages to be unreadable. This procedure will clear the BIOS supervisor password as well.

Use the CMOS1 jumper to clear the CMOS data.

- 1-2 position: Normal operation (default)
- 2-3 position: Clear CMOS data

To clear the CMOS data:

1. Turn off the power to the computer and all peripherals.
2. Unplug the power cord from the computer.
3. Unplug the network cable and all connected peripheral devices from the computer.
4. Place the computer on a flat, steady surface with the rear cover facing upward.
5. Remove the LCD assembly by following the procedure described on the page 30.
6. Locate the CMOS1 jumper on the mainboard.



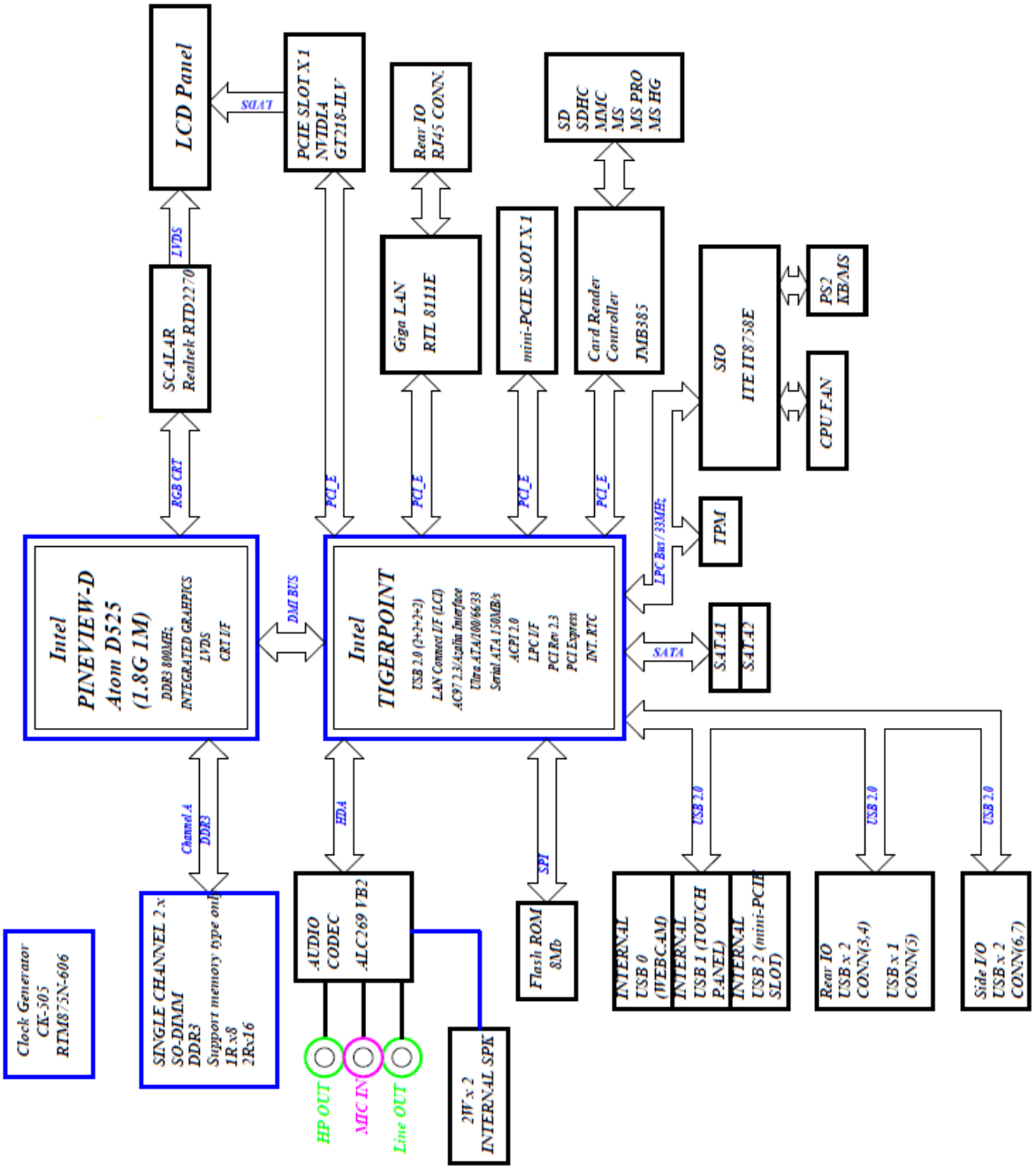
7. Remove the jumper block and set it over the 2-3 pins for 20 to 30 seconds.
8. Return the jumper block to its default 1-2 position.
9. Reinstall all assemblies or cables that have previously been removed.
10. Reinstall the LCD assembly, front bezel, side bars and the computer stand.
11. Connect the AC power cord to the system.
12. Press the power button ⏻ to turn on the computer.
13. During POST, press **Delete** to access the Setup Utility.
14. Press **F9** to load the system default values.
15. Press **F10** to save the changes you made and close the Setup Utility.

System Architecture

This chapter shows the block diagram and board layout of the Packard Bell oneTwo M3600 AIO computer.

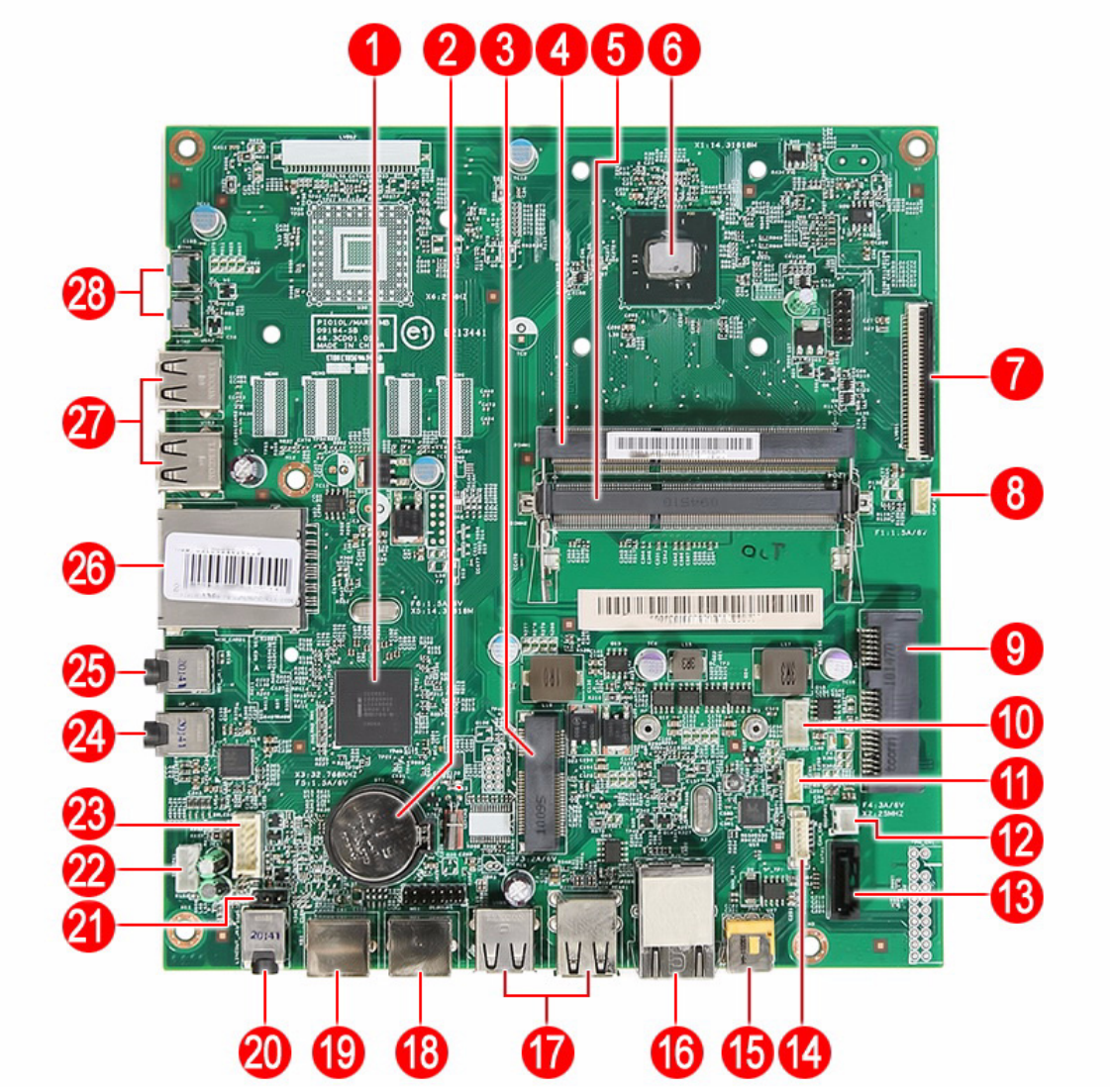
Block Diagram

The core subsystems of the Packard Bell oneTwo M3600 computer are depicted in the following block diagram.



Mainboard Layout

This section shows the major mainboard components.



Item	Code	Component
1	U7	Intel NM10 Express Chipset
2	BT1	RTC battery
3	U41	Mini Card slot for optional WLAN module (802.11 b/g/n)
4	DIMM1	DDR3 slot 1
5	DIMM2	DDR3 slot 2
6	U4	Processor
7	LVDS1	LCD cable connector
8	CPU_FAN1	Processor fan cable connector
9	SATA0	HDD SATA cable connector
10	INV_CN1	Inverter cable connector
11	TOU_CN1	Touchscreen panel connector
12	ODD_PWR1	ODD power cable connector
13	SATA1	ODD SATA cable connector

Item	Code	Component
14	CAM_CN1	Webcam cable connector
15	PWR1	Power jack
16	RJ1	Ethernet port
17	USB5 and USB_REAR1	Rear USB ports
18	MS1	PS/2 mouse port
19	KB1	PS/2 keyboard port
20	LINEOUT_JK1	Line-out jack
21	CMOS1	Clear CMOS jumper
22	INT_SPK1	Speaker cable connector
23	SWLED2	Power button/LED cable connector
24	HP_JK1	Headphone jack
25	MIC_JK1	Microphone jack
26	MEM_CARD1	Card reader
27	USB2 and USB3	Side USB ports
28	BTN1 and BTN2	Brightness control keys

Chapter 6

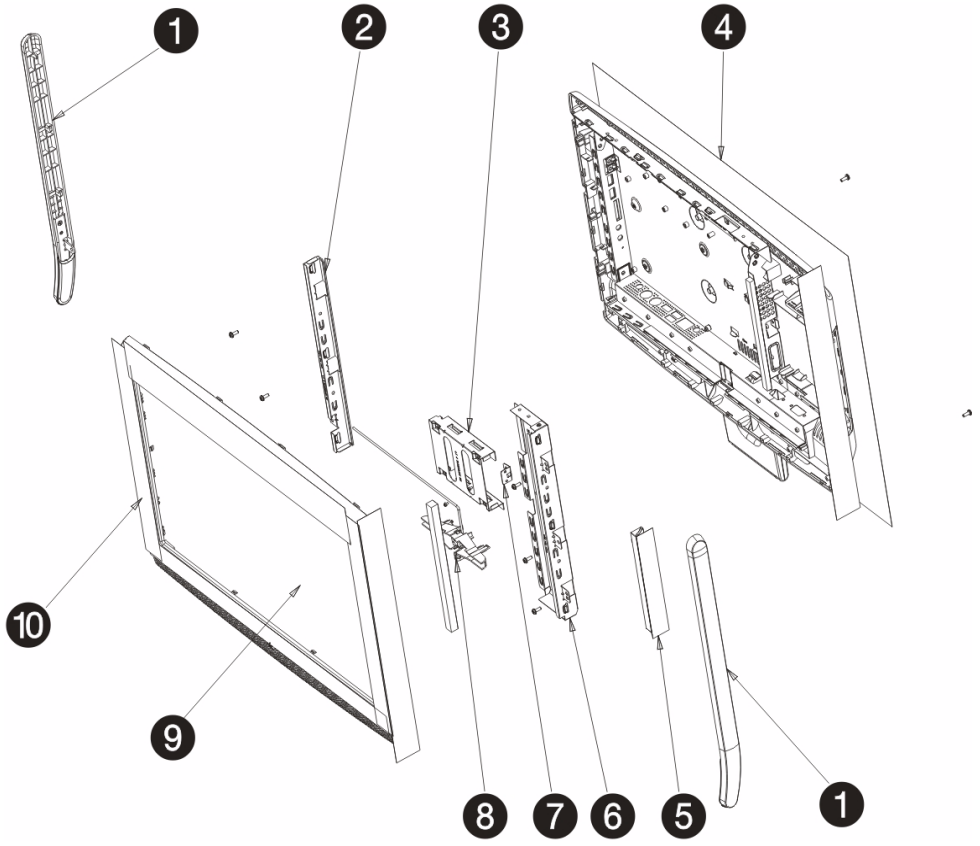
Field Replaceable Unit (FRU) List

This chapter gives you the FRU (Field Replaceable Unit) listing of the Packard Bell oneTwo M3600 computer global configurations. Refer to this list when ordering for repair parts or for RMA (Return Merchandise Authorization).

IMPORTANT Part number changes will not be noted in this printed Service Guide. The part numbers listed in this Service Guide may differ from those given to regional AUTHORIZED SERVICE PROVIDERS. You MUST use the local FRU list provided by your regional office to order FRU parts for repair and service of customer machines. Make sure that you are using the most up-to-date information available on your regional web site or channel when ordering FRU parts.

NOTE Follow the local government regulations, or the rules set by your regional office on how to return or dispose of defective parts.

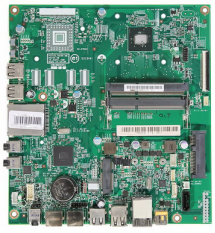
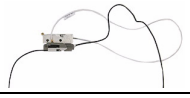
Exploded Diagram

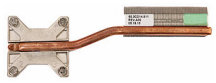
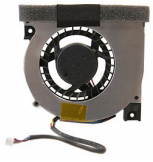
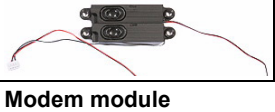


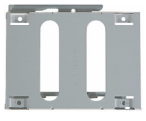
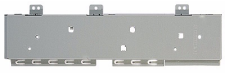
No.	Component
1	Side bars
2	LCD panel bracket
3	HDD cage
4	Rear cover assembly
5	ODD bezel
6	Inverter board bracket
7	ODD bracket
8	Power button/LED assembly
9	LCD panel
10	Front bezel

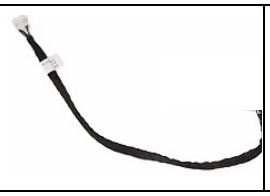
FRU List

System Model: ACER_oTM3600_PMARR

Category	Part Name	Part Number
Boards		
Mainboard		
	MAINBOARD OTM3600 INTEL NM10 RTL8111DL W/CPU 1.8G W/O DIMM	MB.U6E01.001
Inverter board		
	INVERTER BOARD 2L 2PIN DARFON VZ.12164.501	19.VC001.001
	INVERTER BOARD 2L YNV-W21A 2PIN	19.VBK01.001
Webcam module		
	CAMERA 2M 9078 PARKORCHID C04PL036H	57.VBK01.001
	CAMERA MODULE 2M CHICONY CNF924621004591L	57.VBK01.002
Wireless LAN module		
	WIRELESS LAN BOARD LITEON 802.11BGN RALINK RT3090	NI.10200.034
Wireless antennas		
	WIRELESS ANTENNA AUX WLAN EMARR WNC	50.VBK01.008
	WIRELESS ANTENNA MAIN WLAN EMARR WNC	50.VBK01.009
Memory		
	MEMORY 2GB DDRIII 1333MHZ HYNIX HMT325S6BFR8C-H9 LF 256*8 46NM	KN.2GB0B.026
	SODIMM 2GB DDRIII 1333MHZ M471B5773CHS-CH9 LF 256*8 46NM	KN.2GB04.017
	MEMORY 2GB DDRIII 1333MHZ MICRON MT8JSF25664HZ-1G4D1 LF 256*8 0.055UM	KN.2GB03.021
	SODIMM 2GB DDRIII 1333MHZ NT2GC64B88B0NS-CG LF 256*8 0.055UM	KN.2GB0G.018
	SODIMM 1GB DDRIII 1333MHZ KINGSTON ACR128X64D3S1333C9 LF 128*8 0.065UM	KN.1GB0H.017
	MEMORY A-DATA SO-DIMM DDRIII 1333 1GB AD73I1A0873EU LF 128*8 0.065UM	KN.1GB0B.035
	SODIMM 1GB DDRIII 1333MHZ UNIFOSA GU672203EP0200 LF 128*8 0.065UM	KN.1GB0C.009
	SODIMM 1GB DDRIII 1333MHZ SAMSUNG M471B2873FHS-CH9 LF 128*8 46NM	KN.1GB07.004

Category	Part Name	Part Number
Heat sink		
	CPU HEATSINK W/O FAN	60.VBK01.007
System fan		
	FAN	23.VBK01.001
	FAN	23.VBK01.002
Hard drive		
	HDD 160GB 5400RPM 2.5" SATA HGST PANTHER-B HTS545016B9A300 F/W:C60F	KH.16008.027
	HDD 160GB 5400RPM 2.5" SATA WD ML320S WD1600BEVT-22A23T0 F/W:01.01A01 5.H	KH.16007.026
	HDD 250GB 5400RPM 2.5" SATA HGST HTS545025B9A300 PANTHER B LF F/W:C60F DISK IMBALANCE CRITERIA = 0.014G-CM	KH.25007.016
	HDD 320GB 5400RPM 2.5" SATA HGST HTS545032B9A300 PANTHER B LF F/W:C60F DISK IMBALANCE CRITERIA = 0.014G-CM	KH.32008.019
	HDD 320GB 5400RPM 2.5" WD3200BEVT-22A23T0,ML320S,WD SATA 8MB LF F/W:01.01A01	KH.32007.008
	HDD HGST 2.5" 5400RPM 500GB HTS545050B9A300 PANTHER B SATA LF F/W:C60F DISK IMBALANCE CRITERIA = 0.014G-CM	KH.50007.010
Optical drive		
	ODD HLDS SUPER-MULTI DRIVE 12.7MM TRAY DL 8X GT31N LF W/O BEZEL SATA FOR HF+WINDOWS7	KU.0080F.006
	ODD PLDS SUPER-MULTI DRIVE 12.7MM TRAY DL 8X DS-8A4SH LF W/O BEZEL SATA FOR HF+WINDOWS7	KU.0080D.054
LCD panel		
	CCFL LCD LPL 18.5"W WXGA NONE GLARE LM185WH1 TLF1 LF 250NIT 5MS 1000:1 HF	LK.18008.010
Speakers		
	SPEAKER	23.VBK01.004
	SPEAKER	23.VBK01.003
Modem module		
	MODEM CARD 56K PRO-NETS PRONETS VD56UL EXTERNAL USB REV 1.0	FX.10100.023

Category	Part Name	Part Number
Case / Cover / Bracket / Assembly		
Front bezel		
	FRONT BEZEL 18.5" W/LOGO	60.U6E01.002
Rear cover		
	BACK COVER 18.5	60.U6E01.001
Computer stand		
	ASSEMBLY HINGE	60.NC401.004
Computer stand hinge cover		
	HINGE COVER	42.VBK01.002
Side bars		
	FOOT STAND LEFT	60.VBK01.005
	FOOT STAND RIGHT	60.VBK01.006
Power button/LED		
	LED SWITCH HOLDER	42.VBK01.001
	POWER SWITCH HOLDER	60.VBK01.004
HDD bracket		
	HDD BRACKET	33.VBK01.002
ODD bracket		
	ODD BRACKET	33.VBK01.001
ODD bezel		
	DVD-RW ODD BEZEL	42.NC301.001
LCD panel bracket		
	TOUCH PANEL BRACKET LEFT	33.NC301.002
Inverter board cover		
	TOUCH PANEL BRACKET RIGHT	33.NC301.001

Category	Part Name	Part Number
Cables		
Power button/LED cable		
	POWER LED SWITCH CABLE	50.VBK01.003
ODD SATA cable		
	ODD SATA CABLE	50.NC401.002
	ODD SATA CABLE	50.VBK01.001
Inverter board cable		
	INVERTER BOIARD CABLE	50.VBK01.006
LCD LVDS cable		
	LVDS CABLE	50.VBK01.005
Webcam cable		
	CAMERA CABLE	50.VBK01.002
AC adapter		
	ADAPTER 65W 19V 3PIN DELTA ADP-65JH DB A LV5 LED LF YELLOW UMA	AP.0650A.012
	ADAPTER 65W 19V 3PIN HIPRO HP-A0652R3B 1LF LV5 LED LF YELLOW UMA	AP.06501.026
Power cord		
	POWER CORD 10A 250V 3PIN ITALY	27.01518.611
USB keyboard		
	KEYBOARD CHICONY KU-0906 USB 85KEY BLACK ARABIC/ENGLISH	KB.USB03.276
	KEYBOARD CHICONY KU-0906 USB 85KEY BLACK CZECH	KB.USB03.274
	KEYBOARD CHICONY KU-0906 USB 85KEY BLACK GREEK	KB.USB03.295
	KEYBOARD CHICONY KU-0906 USB 85KEY BLACK HEBREW	KB.USB03.289
	KEYBOARD CHICONY KU-0906 USB 85KEY BLACK KOREAN	KB.USB03.319
	KEYBOARD CHICONY KU-0906 USB 85KEY BLACK RUSSIAN	KB.USB03.293
	KEYBOARD CHICONY KU-0906 USB 85KEY BLACK SIMPLIFIED CHINESE	KB.USB03.304
	KEYBOARD CHICONY KU-0906 USB 85KEY BLACK TRADITIONAL CHINESE	KB.USB03.245

Category	Part Name	Part Number
USB keyboard *(continuation)*	KEYBOARD CHICONY KU-0906 USB 85KEY BLACK THAILAND	KB.USB03.277
	KEYBOARD CHICONY KU-0906 USB 85KEY BLACK TURKMEN	KB.USB03.302
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK ARABIC/FRENCH	KB.USB03.300
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK BELGIUM	KB.USB03.286
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK BRAZILIAN PORTUGUESE	KB.USB03.273
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK CZECH/ SLOVAK	KB.USB03.312
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK DANISH	KB.USB03.296
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK DUTCH	KB.USB03.284
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK ENGLISH/CANADIAN FREH	KB.USB03.317
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK FRENCH	KB.USB03.282
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK GERMAN	KB.USB03.280
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK HUNGARIAN	KB.USB03.294
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK ICELANDIC	KB.USB03.287
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK ITALIAN	KB.USB03.281
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK KAZAKH	KB.USB03.301
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK NORDIC	KB.USB03.303
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK NORWEGIAN	KB.USB03.288
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK POLISH	KB.USB03.290
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK PORTUGUESE	KB.USB03.279
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK ROMANIAN	KB.USB03.297
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK SLOVAK	KB.USB03.292
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK SLOVENIAN	KB.USB03.291
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK SPANISH LATIN	KB.USB03.242
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK SPANISH	KB.USB03.278
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK SWEDISH	KB.USB03.283
	KEYBOARD CHICONY KU-0906 USB 86KEY BLACK SWISS/ G	KB.USB03.285
	KEYBOARD CHICONY KU-0906 USB 86KS BLACK TURKISH	KB.USB03.298

Category	Part Name	Part Number
USB keyboard *(continuation)*	KEYBOARD CHICONY KU-0906 USB 86KS BLACK TURKISH-Q	KB.USB03.299
	KEYBOARD CHICONY KU-0906 USB 86KS BLACK UK	KB.USB03.241
	KEYBOARD CHICONY KU-0906 USB 90KEY BLACK JAPANESE	KB.USB03.244
	KEYBOARD CHICONY KU-0906 USB 85KS BLACK US	KB.USB03.240
	KEYBOARD CHICONY KU-0906 USB 85KS BLACK US INTERNATIONAL	KB.USB03.275
USB mouse		
	LOGITECH OPTICAL MOUSE USB M-U0005 BLACK	MS.11200.057
Screws	SCREW M4*8-B FAH MSN+N	86.VBK01.001
	SCREW MACH CAP M3*L6 NI NYLOK	86.VBK01.004
	SCREW MACH PAN M3*L4 NI NYLOK	86.VBK01.003
	SCREW M2 CAP L4 NI	86.NBY01.003
	SCRW MS/P2*3NBX	86.VBK01.002
	SCRW TAP PAN M3L8 ZN	86.VBK01.005

Appendix A

Model Definitions and Configurations

This appendix provides features summary for each of the Packard Bell oneTwo M3600 computer model configurations.

Item	Specification	Specification
Project name	pMarr	
Model name	oTM3600	
Acer part number	PW.U6EE8.001	PW.U6E08.001
Description	oTM3600 CH EMEA001 W7ST32EMPHO2009/ATMD525B/2G*1/ 500G*1/NSM8XS/D18.5W/802.11 b/g/n/ USB/0910B/USB/0910B	oTM3600 CH EMEA001 W7ST32EMPHO2005/ATMD525B/2G*1/ 320G*1/NSM8XS/D18.5W/802.11 b/g/n/ USB/0910B/USB/0910B
Chassis	EMEA001	
Base unit	HX101D	
Bezel	PAIO1018	
LCD panel	D18.5WXGA	
Mainboard	pMarr WINM10_1394(N)_Logo(N)_Eup(Y)	
Processor	ATMD525B	
Memory	SO2GBIII13	
Hard drive	N500GB5.4KS	D320GB7.2KS
Optical drive	NSM8XS	
Card reader	Yes	
Add-on card	802.11 b/g/n (mini-card)(half size) Kit	
AC adapter	65 W	
Keyboard	USB/0910B	
Mouse	USB/0910B	
Operating system	W7ST32EM	

Test Compatible Components

This computer's compatibility is tested and verified by Acer's internal testing department. All of its system functions are tested for both the Home Basic and Home Premium editions of Microsoft's Windows Vista operating system.

Refer to the following lists for components, adapter cards, and peripherals which have passed these tests. Regarding configuration, combination and test procedures, please refer to the Packard Bell oneTwo M3600 Vista Compatibility Test Report released by the Acer Mobile System Testing Department.

Item	Device Name	Vendor
Access Point	Air Station Wireless NFINITI [Model Num: WZR-G144N], 802.11n/g/b	Buffalo
	Buffalo Air Station NFINITI [ModeNum:WZR2-G300N], 802.11n/g/b	Buffalo
Bluetooth Access Point	Bluetooth Access Point [ModeNum:BT300]	X Bridge
Bluetooth Devices	Bluetooth Stereo Headset [ModeNum:HT820]	Motorola
	Bluetooth Mouse [ModeNum:097855020512]	Logitech
	Motorola Bluetooth Wireless Headset H300	Motorola
	Sony Ericsson Stereo Bluetooth Headset HBH-DS970	Sony
External LCD	P243W 24-inch LCD Monitor	Acer
	P244W 24-inch LCD Monitor	Acer
	SP2208WFP 22-inch LCD Monitor	Dell
	UltraSharp 3008WFP 30-inch LCD Monitor	Dell
	2407FPW 24-inch LCD Monitor	Dell
	UltraSharp E2408WFP 24-inch Widescreen HDMI	Dell
Earphone /Microphone	Hawk Stereo Headset 933	Hawk
Projector	3300MP Projector	Dell
SIM Card	FarEasTone 3G SIM Card	FarEasTone
	Chunghwa Telecom 3G SIM Card	Chunghwa Telecom
TV	W37G (HDMI)	Westinghouse
	TC-37MPK (VGA/HDMI)	Panasonic
USB 3G Card	Huawei Mobile Connect E220 USB Modem 3G (E220: HSDPA/UMTS/EDGE/GPRS/GSM)	Huawei
USB Camera	Canon Digital IXUS 860 IS Digital Compact Camera (8.0 MP CCD sensor/DIGIC III with Face Detection AF/AE/FE/28mm wide-angle lens with optical Image Stabilizer, Media storage: SD, SDHC, MMC, MMCplus, built-in SD 32 MB)	Canon
USB Storage Drive	6-in-1 Flash Card Reader/Writer	PQI
USB Flash Drive	Transcend JetFlash USB 2.0 Flash Drive V85 8 GB Memory Key	Transcend
	Apacer AH421 8 GB	Apacer
	A-Data PD16 Vista 16 GB	A-Data
	Transcend JetFlash USB 2.0 Flash Drive V10 16 GB Memory Key	Transcend

Item	Device Name	Vendor
USB HDD	2.5-inch Portable 80 GB Hard Disk	Transcend
USB ODD	DVD+R/RW (USB 2.0)	Plextor
USB Hub and Others	Huawei Mobile Connect E220 USB Modem 3G (E220: HSDPA/UMTS/EDGE/GPRS/GSM)	Huawei
	PowerSync USB2.0 4-Port Mini Hub (HU151W White)	PowerSync
	Techworks 4-Port USB2.0 Mini Hub (OW4PTUSBHB)	Techworks
USB Keyboard/Mouse	First Wheel Mouse	Logitech
	Internet Navigator Keyboard	Logitech
	Dell L30U 0N242F USB Keyboard	Dell
USB Printer	HP Deskjet F4280 All-in-One: Printer/ Scanner/Copier, 1200x2400 dpi)	HP
USB Speaker/Joystick	iFun USB Speaker (JS1200UA)	JS
	Dell USB Speaker	Dell
Wireless Printer	Photosmart C309 (CC35A) All-in-One Printer (4x6 photos/ CD/DVD/Quick Forms, /Scanner/Copier/Fax) Port: USB2.0/Ethernet/PictBridge/802.11g/BT	HP
	Photosmart C4580 All-in-One Printer (4x6 photos) /Scanner/ Copier Port: USB2.0/802.11g.b/Memory Card	HP
Memory Stick	High Speed 1 GB Memory Stick Pro Duo	Lexar
	MS PRO Dou 2 GB High Speed	Sony
	MS PRO 2 GB Memory Card	Sony
	SanDisk Memory Stick Micro (M2) 8GB Card	SanDisk
Multimedia Card	RS-MMC 128MB Memory Card	SanDisk
	RS-MMC Mobile 256MB Memory Card	PQI
	Transcend MMC plus 4GB Card	Transcend
	Turbo 200X 2GB MMC Card	A-DATA
SD Card	4GB SD PRO Memory Card	RiDATA
	SanDisk Multi-use SD Class 2 Memory Card 2GB	SanDisk
	SD Card 2 GB (150x Hi-Speed)	Apacer
	SanDisk MicroSDHC 4 GB Card with Adapter	SanDisk
	Kingston SDHC SD4 32 GB Card	Kingston
xD Card	Olympus xD-Picture Card M+ 2GB Speed Card	Olympus
	Fujifilm xD-Picture Card Type M 2 GB	Fujifilm

Approved Vendor List (AVL)

Component	Vendor	Type	Description	Part Number
Mainboard kit	Wistron	pMarr WINM10_1394(N)_Logo(N)_ Eup(Y)	Mainboard oTM3600 Intel NM10 RTL8111DL AIO 18.5 W/O 1394 LF	MB.U6E01.001
Front bezel	Wistron	PAIO1018	Wistron PB Bezel PAIO1018 for 18.5" w/i HX101D chassis	PZ.11900.229
Chassis	Wistron	HX101D	Wistron(LY) Chassis xSFF HX101D for AIO PAIO1018 Bezel	HS.13100.181
Processor	Intel	ATMD525B	CPU Intel Atom D525 1.8G 1M Pineview, 13W, Dual Core	KC.ADB01.525
Heat siink	CCI	Cooler AIO Marr w/i MXM	CCI v/eMarr Cooler AIO Marr w/i MXM w/ Delta 7012mm fan, w/ CPU sink, w/ MXM plate, for Intel Pine Trail	HI.10800.082
		Cooler AIO Marr w/o MXM	CCI v/eMarr Cooler AIO Marr w/o MXM w/ Delta 7012mm fan, w/ CPU sink, for Intel Pine Trail	HI.10800.083
Memory	Kingston	SO1GBIII13	Memory KINGSTON SO-DIMM DDRIII 1333 1GB ACR128X64D3S1333C9 LF 128*8 0.065um	KN.1GB07.004
	Samsung	SO1GBIII13	Memory SAMSUNG SO-DIMM DDRIII 1333 1GB M471B2873FHS-CH9 LF 128*8 46nm	KN.1GB0B.035
	Unifosa	SO1GBIII13	Memory UNIFOSA SO-DIMM DDRIII 1333 1GB GU672203EP0200 LF 128*8 0.065um	KN.1GB0H.017
	A-Data	SO1GBIII13	Memory A-DATA SO-DIMM DDRIII 1333 1GB AD73I1A0873EU LF 128*8 0.065um	KN.1GB0C.009
	Micron	SO2GBIII13	Memory MICRON SO-DIMM DDRIII 1333 2GB MT8JSF25664HZ-1G4D1 LF 256*8 0.055um	KN.2GB04.017
	Hynix	SO2GBIII13	Memory HYNIX SO-DIMM DDRIII 1333 2GB HMT325S6BFR8C-H9 LF 256*8 46nm	KN.2GB0G.018
	Nanya	SO2GBIII13	Memory NANYA SO-DIMM DDRIII 1333 2GB NT2GC64B88B0NS-CG LF 256*8 0.055um	KN.2GB03.021
	Samsung	SO2GBIII13	Memory SAMSUNG SO-DIMM DDRIII 1333 2GB M471B5773CHS-CH9 LF 256*8 46nm	KN.2GB0B.026
Hard drive	HGST	N320GB5.4KS	HDD HGST 2.5" 5400rpm 320GB HTS545032B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.32007.008
	WD	N320GB5.4KS	HDD WD 2.5" 5400rpm 320GB WD3200BEVT-22A23T0,ML320S,WD SATA 8MB LF F/W:01.01A01	KH.32008.019
Optical drive	HLDS	NSM8XS	ODD HLDS Super-Multi DRIVE 12.7mm Tray DL 8X GT31N (R5-1) LF W/O bezel SATA with Renesas Solution (HF + Windows 7)	KU.0080D.054
	PLDS	NSM8XS	ODD PLDS Super-Multi DRIVE 12.7mm Tray DL 8X DS-8A4SH LF W/O bezel SATA (HF + Windows 7)	KU.0080F.006

Component	Vendor	Type	Description	Part Number
Card reader				
Wireless LAN kit	Lite-On	802.11 b/g/n (mini-card)(half size)	Lite-On WN6602RH, Ralink RT3090 WLAN Lite-On WN6602RH, Ralink RT3090, 802.11b/g/n 1x1 WLAN (mini-card) Half Size	NI.10200.034
		802.11 b/g/n (mini-card)(half size) Kit	Lite-On WN6602RH Kit WLAN ANTENNA MAIN WLAN 680mm+ANTENNA AUX WLAN 600mm	NI.10200.043
Modem	Pro-Nets	56K MDM USB	Pro-Nets VD56UL External USB Without any brand logo Rev 1.0	FX.10100.023
LCD panel	LGD	D18.5WXGA	CCFL LCD LPL 18.5"W WXGA None Glare LM185WH1 TLF1 LF 250nit 5ms 1000:1 HF	LK.18008.010
Adapter	Delta	65W	Adapter DELTA 65W 19V 1.7x5.5x11 Yellow ADP-65JH DB A, LV5 LED LF	AP.06501.026
	Chicony	65W	Adapter HIPRO 65W 19V 1.7x5.5x11 Yellow HP-A0652R3B 1LF, LV5 LED LF	AP.0650A.012
USB mouse	Logitech	USB/0910B	Logitech optical mouse USB M-U0005 Black	MS.11200.057
USB keyboard	Chicony	USB/0910B	Keyboard CHICONY KU-0906 USB 85KS Black US	KB.USB03.240
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black UK	KB.USB03.241
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Spanish Latin	KB.USB03.242
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Canadian French	KB.USB03.243
		USB/0910B	Keyboard CHICONY KU-0906 USB 89KS Black Japanese	KB.USB03.244
		USB/0910B	Keyboard CHICONY KU-0906 USB 85KS Black Traditional Chinese	KB.USB03.245
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Brazilian Portuguese	KB.USB03.273
		USB/0910B	Keyboard CHICONY KU-0906 USB 85KS Black Czech	KB.USB03.274
		USB/0910B	Keyboard CHICONY KU-0906 USB 85KS Black US International	KB.USB03.275
		USB/0910B	Keyboard CHICONY KU-0906 USB 85KS Black Arabic/English	KB.USB03.276
		USB/0910B	Keyboard CHICONY KU-0906 USB 85KS Black Thailand	KB.USB03.277
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Spanish	KB.USB03.278
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Portuguese	KB.USB03.279
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black German	KB.USB03.280
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Italian	KB.USB03.281
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black French	KB.USB03.282
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Swedish	KB.USB03.283
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Dutch	KB.USB03.284
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Swiss/G	KB.USB03.285

Component	Vendor	Type	Description	Part Number
USB keyboard *(continuation)*		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Belgium	KB.USB03.286
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Icelandic	KB.USB03.287
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Norwegian	KB.USB03.288
		USB/0910B	Keyboard CHICONY KU-0906 USB 85KS Black Hebrew	KB.USB03.289
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Polish	KB.USB03.290
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Slovenian	KB.USB03.291
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Slovak	KB.USB03.292
		USB/0910B	Keyboard CHICONY KU-0906 USB 85KS Black Russian	KB.USB03.293
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Hungarian	KB.USB03.294
		USB/0910B	Keyboard CHICONY KU-0906 USB 85KS Black Greek	KB.USB03.295
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Danish	KB.USB03.296
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Romanian	KB.USB03.297
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Turkish	KB.USB03.298
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Turkish-Q	KB.USB03.299
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Arabic/French	KB.USB03.300
		USB/0910B	Keyboard CHICONY KU-0906 USB 85KS Black Kazakh	KB.USB03.301
		USB/0910B	Keyboard CHICONY KU-0906 USB 85KS Black Turkmen	KB.USB03.302
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Nordic	KB.USB03.303
		USB/0910B	Keyboard CHICONY KU-0906 USB 85KS Black Simplified Chinese	KB.USB03.304
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black Czech/Slovak	KB.USB03.312
		USB/0910B	Keyboard CHICONY KU-0906 USB 86KS Black English/Canadian French	KB.USB03.317
		USB/0910B	Keyboard CHICONY KU-0906 USB 85KS Black Korean	KB.USB03.319

Appendix C

Online Support Information

This appendix describes online technical support services available to help you repair your Acer products.

If you are a distributor, dealer, ASP or TPM, please refer your technical queries to your local Acer branch office. Acer branch offices and regional business units can access our website. However some information sources will require a user ID and password. These can be obtained directly from Acer CSD Taiwan.

Acer's website offers you convenient and valuable support resources whenever you need them.

In the Technical Information section you can download information on all Acer notebook, desktop, All-In-One (AIO) and server models including:

- Service guides for all models
- User's manuals
- Training materials
- BIOS updates
- Software utilities
- Spare parts lists
- TABs (Technical Announcement Bulletin)

For these purposes, we have included a PDF file to facilitate the problem-free downloading of our technical material.

Also available on this website are:

- Detailed information on Acer's International Traveler's Warranty (ITW)
- Returned material authorization procedures
- An overview of all the support services we offer, accompanied by a list of telephone, fax and email contacts for all your technical queries.

We are always looking for ways to optimize and improve our services, so if you have any suggestions or comments, please do not hesitate to communicate these to us.

A

- AC adapter
  - part number 68
  - specifications 8
- AC power cord, part number 68
- AC power jack 5
- ACPI, see Advanced Configuration Power Interface 2
- Advanced BIOS Features menu 14
- Advanced Chipset Features menu 15
- Advanced Configuration Power Interface
  - specifications 2
  - wake-up options 17
- antivirus software 1
- audio
  - headphone jack 4
  - line-out jack 5
  - microphone jack 4
  - specifications 8
  - troubleshooting 55

B

- BIOS
  - checkpoints 44
  - clear CMOS 58
  - crisis recovery disk 57
  - recovery 57
  - specifications 6
  - system passwords 20
  - version 12
- BIOS Security Features menu 20
- block diagram 59
- boot block
  - checkpoints 44
  - execute 57
- boot sequence 14
- brightness control keys 4

C

- card reader
  - location 4
  - specifications 7
- checkpoints
  - boot block 44
  - DIM 48
  - overview 44
  - POST 46
- CMOS clear 58
- CMOS Setup Utility
  - access 10
  - Advanced BIOS Features menu 14
  - Advanced Chipset Features menu 15
  - BIOS Security Features menu 20
  - Exit Without Saving 23
  - Frequency/Voltage Control menu 19
  - Integrated Peripherals menu 16
  - Load Default Settings 22
  - navigation keys 11
  - overview 9
  - PC Health Status menu 18
  - Power Management Setup menu 17
  - Product Information menu 12
  - Save & Exit Setup 23
  - Standard CMOS Features menu 13
- computer stand
  - location 5
  - part number 67
  - remove 26
- computer stand hinge cover
  - part number 67
- connectivity
  - Ethernet 7
  - WLAN 7

D

- DIM checkpoints 48
- disassembly procedures
  - computer stand 26
  - front bezel 28
  - guidelines 63
  - hard disk drive 35
  - heat sink 38
  - inverter board 31
  - LCD assembly 30
  - LCD LVDS cable 31
  - LCD panel bracket 31
  - mainboard 42
  - memory 39
  - optical disc drive 33
  - power button/LED assembly 40
  - preparatory steps 25
  - side bars 27
  - speakers 41
  - system fan 36
  - tools 25
  - webcam cable 39
  - webcam module 29
- display
  - inverter board, remove 31
  - LCD assembly, remove 30
  - LCD LVDS cable, remove 31
  - LCD panel bracket, remove 31
  - troubleshooting 55

E

- environmental requirements 2
- Ethernet
  - port location 5
  - specifications 7

Exit Without Saving menu 23
exploded view 64

F

Field Replaceable Unit, see FRU list 63
Frequency/Voltage Control menu 19
front bezel
  part number 67
  remove 28
FRU list
  components list 65
  exploded view 64
  part number updates 63

G

graphics controller 1

H

hard disk drive
  bracket, part number 67
  part number 66
  remove 35
  SATA connectors 60
  specifications 7
  troubleshooting 54
hardware
  configuration utility 9
  exploded view 64
  FRU list 63
  information display 12
  specifications 6
  status monitoring 18
  troubleshooting 43
HDD, see hard disk drive 1
headphone jack 4
heat sink
  part number 66
  remove 38
humidity 2

I

I/O ports
  listing 1
  location 5
Integrated Peripherals menu 16
inverter board
  cable, part number 68
  cover, part number 67
  part number 65
  remove 31

K

Kensington slot 5
keyboard
  part number 68
  port 5

L

LAN port
  location 5
  specifications 7
LCD LVDS cable
  part number 68
  remove 31
LCD panel
  bracket, part number 67
  bracket, remove 31
  part number 66
  specifications 8
Load Default Settings menu 22

M

mainboard
  component identification 60
  part number 65
  remove 42
  specifications 2
  troubleshooting 53
media storage 1
memory
  check size 12
  DIMM slots 60
  part number 65
  remove 39
  specifications 1, 6
  troubleshooting 53
microphone 3
microphone jack 4
modem
  part number 66
  troubleshooting 55
mounting option 1
mouse
  part number 70
  port 5

O

ODD, see optical disc drive 1
online support information 79
operating system 1
optical disc drive
  bezel, part number 67
  bezel, remove 34
  bracket, part number 67
  bracket, remove 34
  location 5
  part number 66
  remove 33
  SATA cable, part number 68
  specifications 7
  troubleshooting 54

P

part numbers
  AC adapter 68
  AC power cord 68
  computer stand 67
  computer stand hinge cover 67
  front bezel 67
  hard disk drive 66

HDD bracket 67
heat sink 66
inverter board 65
inverter board cable 68
inverter board cover 67
keyboard 68
LCD LVDS cable 68
LCD panel 66
LCD panel bracket 67
mainboard 65
memory module 65
modem 66
mouse 70
ODD bezel 67
ODD bracket 67
ODD SATA cable 68
optical disc drive 66
power button 67
power button/LED cable 68
rear cover 67
screws 70
side bars 67
speakers 66
system fan 66
webcam cable 68
webcam module 65
WLAN antennas 65
WLAN module 65
PC Health Status menu 18
POST, see Power-On Self-Test 46
power
AC power jack 5
ACPI compliance 2
button/indicator 3
button/LED assembly, remove 40
troubleshooting 56
wake-up options 17
power button, part number 67
power management
configure 17
specifications 2
Power-On Self-Test
checkpoints 46
error messages 48
processor
check type/speed 12
specifications 6
troubleshooting 53
Product Information menu 12
PS/2 keyboard port 5
PS/2 mouse port 5

R

rear cover, part number 67
reset button 4
Return Merchandise Authorization 63
RMA, see Return Merchandise Authorization 63
RTC battery
BIOS error 9
location 60
RTC clock
RTC battery 60
troubleshooting 55

S

Save & Exit Setup menu 23
security features 2
side bars
part number 67
remove 27
speakers
location 3
part number 66
remove 41
specifications
AC adapter 8
antivirus 1
audio 8
card reader 7
display 8
Ethernet controller 7
hard disk drive 7
memory 6
optical disc drive 7
processor 6
system BIOS 6
system chipsets 6
webcam 8
WLAN controller 7
Standard CMOS Features menu 13
supervisor password 20
system architecture 59
system chipsets 6
system date 13
system dimensions 2
system fan
part number 66
remove 36
system passwords
change 21
remove 21
set 21
system time 13
system views
front view 3
left view 5
rear view 5
right view 4

T

temperature
monitoring 18
operating range 2

troubleshooting
BIOS checkpoints 44
BIOS recovery 57
clearing CMOS 58
component failure 53
hardware diagnostic procedure 43
online support information 79
POST error indicators 48

U

USB ports
bootable device 16
legacy device 16
right 4, 5
user password 20

V

VESA mounting 1

W

wall mount option 5
webcam
cable, part number 68
cable, remove 39
location 3
module, part number 65
module, remove 29
specifications 8
wireless LAN
antennas, part number 65
module, part number 65
specifications 7